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## How do Belgian companies deal with Chinese competition, its relentless progress and China's intellectual property protection policy?

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**HOW DO BELGIAN COMPANIES DEAL WITH CHINESE  
COMPETITION, ITS RELENTLESS PROGRESS AND CHINA'S  
INTELLECTUAL PROPERTY PROTECTION POLICY?**

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En vue de l'obtention du diplôme de  
Master en Sciences de gestion  
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## Abstract

Intellectual property is a major concern for most innovative companies. It is also of very high importance for China, which is making a shift towards innovation and aims to become a global powerhouse for intellectual property protection. For years, the country has been facing a lot of criticism regarding its operating modes and real ambitions while it suffers a rather bad reputation regarding its intellectual property protection system, especially by foreigners. However, despite the country's reputation, many foreign companies are not doing a particularly good job of protecting their intellectual property in China, if at all, while some others excel. Many companies are not aware of what China is, how it has and is evolving and do not understand the business challenges and opportunities in and coming from the country, which often go beyond the business level. To establish an understanding of the current situation, this study aims to recontextualise Chinese actions, to expose a utilisation of the Chinese system as well as to provide a scope of strategic possibilities by focusing mainly on patents. This was made possible thanks to interviews with 14 companies of various sizes and sectors, all of which have IP-related interests in China as well as 3 IP-focused law firms. The study has shown that China is indeed extending its influence in Europe as well as in other regions of the world and that there is a growing need for companies to act in an informed manner with regard to the protection of their intellectual property. Although the tools and procedures for protection are common to all, there is no single strategy but a multitude that depends mainly on the industry in which the company operates, its business strategy, its level of internationalisation and its financial resources.

Keywords: China, geo-economics, intellectual property, competitiveness, IP strategy



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## Introduction

China is becoming an increasingly important actor in the world, both in terms of its participation in various international institutions and organisations and in terms of its large and growing companies. The country is adapting its laws at a steady pace in order to continue its economic development and to meet the agenda set by the Chinese government to become the world's leading power by 2049<sup>1</sup>. More than a long-term business strategy for the country to become number one, China combines its economic interests with others that have direct consequences on other countries. It mainly uses its size and economic power to influence them, whether by developing its own institutions, large-scale projects such as "Belt and Road Initiative"<sup>2</sup> or by recognising places of its territory which are internationally recognised to be owned by other countries.

Although China is increasingly opening its domestic market to foreign companies, it has been widely accused of intellectual property infringement and even theft. These acts could have serious consequences for the world order and pose security problems for some countries. These, such as the United States, consider a competitive approach while embracing cooperation with China (Orock Enoru, 2021). As Chinese companies follow the decisions of Chinese officials to steer the country's development trajectory towards greater innovation, the issue of intellectual property theft is accompanied by increased competition in markets that have become a real race for innovation especially in new technologies, which are one of the main strategic development areas of China.

Now that China has reached a certain level of development, it wants to become an example in terms of intellectual property protection. It is doing this through reforms to comply with the expectations of the international organisations in which it participates. This continuous intellectual property protection policies improvement leads to foster and encourage higher innovation (Noon, 2021). Belgian and European companies must therefore adapt to the evolution of the Chinese market, which is growing exponentially, to its threat, and they must comply with the rules that are dictated by China within its own market and, increasingly, in others.

There is very little literature on the strategy of European companies in terms of intellectual property. There are therefore significant gaps to be filled, which is one of the aims of this thesis. Moreover, most of the time, intellectual property strategies are discussed within companies with external advisors who are specialised in this area. They can only refer very briefly to scientific literature. It therefore seems crucial, given the exponential evolution of China in terms

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<sup>1</sup> This year represents the centenary of the proclamation of the People's Republic of China when the Republic of China was defeated and forced to retreat to the island of Taiwan (U.S. Department Of State, 2007).

<sup>2</sup> This initiative aims to improve connectivity and cooperation between the participating countries (World Bank, 2018). It also takes place in a context of superpower rivalry with the United States. The initiative would allow China to secure its trade channels, offer new infrastructure projects to its state-owned enterprises (SOE) and develop the country's poorer inland regions (Jie & Wallace, 2021).

of competitiveness, that the gaps are filled to be able to respond to the systemic and economic challenge that China currently represents and will represent even more in the coming years. The main research question is therefore: “How do Belgian companies deal with Chinese competition, its relentless progress and its intellectual property protection policy?”. As this question is very broad and requires a comprehensive view of the Chinese situation, it can be subdivided into:

- What are China's goals and how is it going to achieve them?
- What challenges are Belgian companies facing?
- How is the Chinese intellectual property legal system constructed and how can it be utilised in the most efficient way?
- What techniques are in place to best protect its intellectual property?

Following these questions and the introduction, several hypotheses can be put forward:

- H1: China uses Chinese companies to serve a geopolitical cause beyond them.
- H2: China wants to take control of international institutions so that everyone plays by the country's own rules and thus favours Chinese companies internationally.
- H3: Foreign companies are disadvantaged in China by the system and cannot compete as well as their Chinese counterparts on this market.
- H4: Belgian companies do not do enough to protect their intellectual property in general but especially in China.
- H5: Technology transfer is still common in China and orchestrated by the Chinese government.

In order to test the hypotheses and answer the research question, this document is divided into two main parts. The first is a literature review examining two fundamental concepts: China's geo-economic intentions on the one hand and China's intellectual property protection system and its use on the other hand. The second part is a qualitative survey of Belgian companies or companies with a major subsidiary in Belgium that own at least one patent in China.

## Methodology

Intellectual property strategic processes of Belgian companies are not found or very little in the literature. It is very often a company-specific and confidential process. In order to delimit and reduce the population of all Belgian companies to obtain a sample of innovative companies, I used the public database of Agoria<sup>3</sup>. Agoria was deliberately chosen because it allows access to members' public information grouped in one place, such as data related to the size of the company, its location, a direct link to the website and possibly a contact person, while increasing the likelihood it has at least one patent in China given the nature of the federation. The probability of finding companies that have a patent in China with Agoria's database is higher than with a random sample of Belgian companies. These data were gathered in an Excel sheet. Due to the large number of companies, the html code of each page was used to gather all information quicker and without specific typography or visual characteristics. Each division having for class name "col-sm-6" and an <h3> within it was therefore copied. All <h3> represent the title of the page or the names of the companies within it.

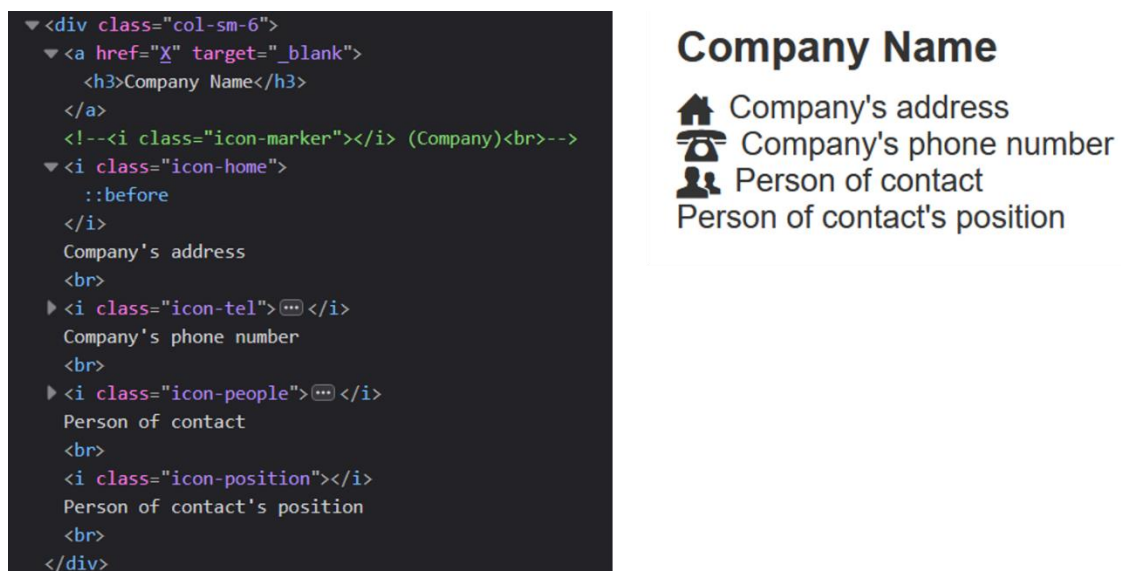


Figure 1: Example recreated from the html code of the Agoria database

Once the process was completed, all company names were cross-referenced with the Chinese database of the CNIPA (Chinese Intellectual Property Agency). I was then able to identify which companies were members of Agoria and had one or more patent applications or granted patents. It allowed me to accumulate extensive data on them, gathered in a new Excel sheet (see Appendix B). Once all data had been collected, I contacted each of the sixty-six companies meeting criteria to propose them an individual meeting. Eleven interviews were conducted with

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<sup>3</sup> Agoria is the largest party of the Federation of Enterprises in Belgium (FEB/VBO) with over 2000 companies. It is the federation of the technology industry in the manufacturing, digital and telecommunications sectors (Agoria, 2022; FEB, 2022). Access to the database can be found here: <https://tools.agoria.be/WWW.wsc/rep/prg/ApplLookup?HLproc=webextra/prg/olEntityList&SessionLID=2>

companies appearing in both CNIPA's and Agoria's databases. Three other companies that are not part of Agoria were also interviewed because of their reputation in Belgian innovation and their recurrence in the Chinese database. These meetings are confidential and, as agreed with these parties, the notes taken during them will be destroyed once the thesis research work is completed. Meetings have also been framed by legal-binding agreements for those who wanted to. Before the first interview, a list of questions (see Appendix C) was prepared to see if the main points were covered during the discussion and, if necessary, to come back to some topics that might have been omitted. The exchanges were based on open discussions. Questions are only used to foster discussions and to check if everything had been covered. Once all the interviews had been conducted, the notes were compiled in an Excel spreadsheet by question and by company in order to be able to effectively compare the responses of each company and draw conclusions. This part will only be based on results from companies, unless sources are cited.

No contributing company will be mentioned or publicly thanked for its contribution. While collected data makes it possible to identify certain trends, it might still be possible to identify them by grouping all the data of one company together even if their name is erased. To avoid potential harm to the interviewee or the company to which he/she belongs, no data collected on the interviewed companies will be made available.

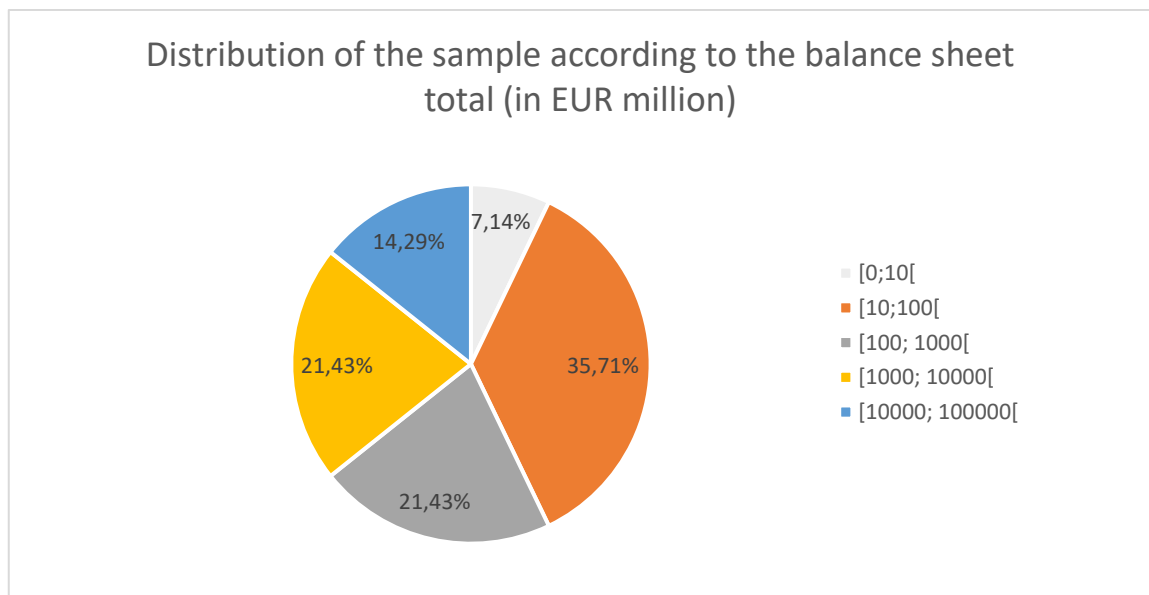


Figure 3: Size of the sampled companies by balance sheet total

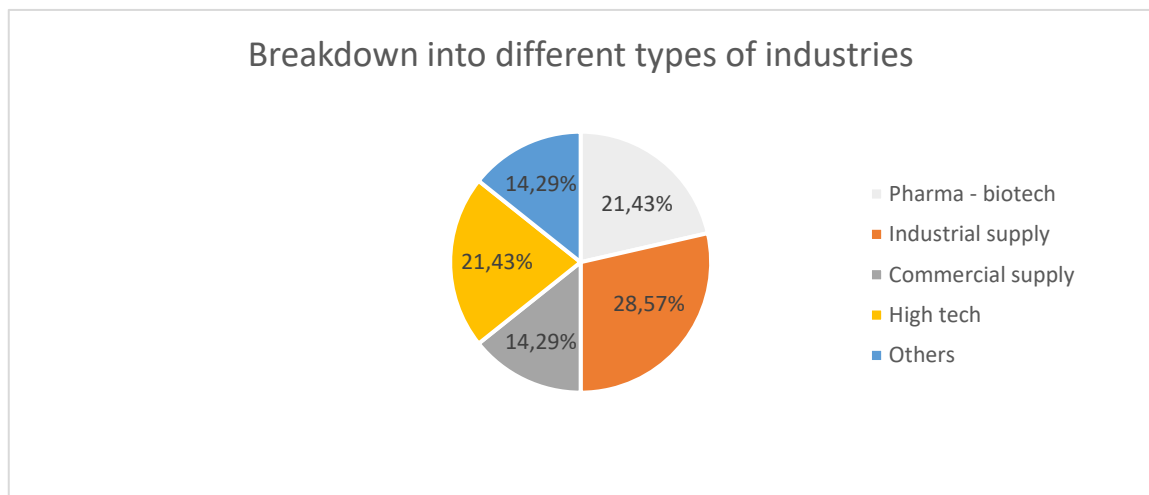


Figure 2: Distribution of the companies in the sample according to their industry

## Part 1: Literature review

The literature on China is very extensive on both geo-economic and legal topics. The latter, however, is not so straightforward. Since the legal system is constantly evolving at a fast pace, it is difficult for academics to keep up with all the new developments announced by the Chinese government and to turn them into almost real academic articles.

It is also quite complicated to find serious articles dealing with the different IP strategies by European and, even more so, Belgian companies. These strategies, although generic and common to companies, often involve giving researchers potentially sensitive data. As a result, governmental and international institutions are generally the ones that publish the most on this subject.

The literature review is divided into two main parts: the geo-economy of China (A) and the Chinese legal system (B). The first aims to identify China's growing importance in the world and the political and cultural strategies underlying this global expansion. The other reflects on the Chinese intellectual property system and its evolution in support of the global expansion strategy.

### **A. Geoeconomics / competitiveness**

China is known to be the next world leader in many ways. The most important of these ways is the economy. However, even if economy is one of the main priorities, one should not underestimate China's desire to develop its sphere of influence and soft power over its direct neighbours and over the world. The development of its sphere of influence involves a whole series of strategies, notably those of the wéiqí (Go game) used for the New Silk Roads project or of Jisi Wang, who advocates adapting foreign policy according to economics rather than traditional concerns (Jha, 2021). The theory of wéiqí in international relations theory is meant to be opposed to that of chess. The latter involves the notion of taking down the opponent move by move while the Go game brings victory subtly and harmoniously (Shih & Huang, 2020). Parallels between the goban (wéiqí's checkerboard) and China's use of international relations can easily be drawn.

In line with the opening-up policy started by Deng Xiaoping, China sees technological innovation as a key element of its economic development strategy for the coming years. However, innovation can only work if it is protected and respected. Therefore, China needs a legal system addressing intellectual property protection issues in adequacy with the ambition the country puts into its innovations (Deloitte China Innovation Department, 2019). The State Council of the People's Republic of China has issued a document giving guidelines from 2021 to 2035 to improve China's intellectual property with the aim of becoming the world leader in 2035 (Qu & Zhang, 2021). This guidance includes providing protection to promote trade, academic exchange and international cooperation (Ling & Wang, 2021).

## 1.1. Context of China

### 1.1.1. Chinese vision

China has been involved in international organisations for many years. The most significant and important accession was probably to the World Trade Organisation (WTO) in 2001, supported by the United States (Lai, 2001). Since the beginning of China's opening up in 1978, under the presidency of Deng Xiaoping, the country has rapidly joined international institutions, including the World Intellectual Property Organisation (WIPO) since 1980 (World Intellectual Property Organisation, 2021). Today, China wants to regain its former greatness and influence by 2049 as it will be the century of the People's Republic of China. This requires partnerships with great powers, favoured by China's presence in international institutions. China opted for a low-profile policy while preserving its culture to benefit from the springboard that these collaborations could offer. Since Xi Jinping came to power in 2013, this policy has been set aside in favour of a strong foreign policy that does not hesitate to take action and use its influence whether cultural or economical to promote China and defend itself (Sutter, 2021). Chinese development and partnerships have finally elevated China to the status of a major world power, but still considered by some as developing.

### 1.1.2. Chinese intellectual property reform

It is undeniable that China is seeking to continue its development and that one of the characteristics for a giant to continue to develop is to do so through innovation. China is betting heavily on the digital economy, as it believes this will be one of the main drivers of growth in the decades to come. The digital industry is so crucial to China that it is under the close supervision of the Chinese government. President Xi has pledged to address harmful and anti-competitive practices as well as monitoring compliance with tax, consumer protection and employee protection laws (Zhao, 2021). Unlike more traditional industries, new technologies can hardly be confined to a single country. The legal framework of most countries is lagging behind and is no longer up to date with the challenges and new technologies of today, let alone tomorrow (Marchant, 2011). China has therefore decided to adapt its law to better protect the rights of new technology players but also to stimulate innovation and thus consolidate China's influence in the world. Huawei, the Chinese tech giant, was in 2019 and for the third year in a row, the company filing the most international patents (Sarkar, 2021). This company is developing and adopting new technologies very quickly, such as 5G (Sacks, 2021).

Although the digital economy is one of the national strategic priorities, the country cannot abandon its other industries. China is divided into different business clusters, a mode of operation theoretically developed by Michael Porter (Porter & Porter, 1998). To kickstart the transition from the old legal system to the new IP-based one, pilot tests have been conducted in several of these clusters. These clusters have their own intellectual property regulations. They are more than economic clusters; they are places that cultivate innovation. Special Economic Zones (SEZ) stimulate more innovation. They become particularly effective when they are oriented towards high-tech as this is the path chosen by the officials. More innovation implies an increase in the usage of IP rights. SEZ have a certain experience in intellectual property rights

protection as they deal with specific industries. These high-tech oriented SEZ are more effective than many other economic areas-oriented such as finance or machinery (Wu et al., 2021). Although there is a difference with zones dealing with high-tech, other sectors of the Chinese economy are not left behind. The culture of innovation is developing very rapidly in all areas and the pace of adoption in Chinese society is unparalleled to what we can experience in the West as i.e., contactless payment adoption while the westerners are stuck with card payment (Klein, 2021).

China's goal is to become a world leader in intellectual property by 2035. This ambition is almost the contrary of the many accusations the country has faced during the previous decades. Some of them were related to industrial espionage, intellectual property theft and anti-competitive practices on its own territory (Roper, 2014). To reach its objective, China must reform its system. The year 2035 was not chosen by chance. The IP reform programme is part of "Vision 2035", a nearly all-encompassing plan to make China a prosperous nation with a mature economy (Savic, 2021). The Chinese Communist Party only gives a long-term vision which can be interpreted as a goal to aim for, but only takes concrete action in the medium term, in five-year periods. These plans are the steps leading to the ultimate 2049 goal. For example, by the year 2025, Chinese officials are aiming for their country to become a strong intellectual property country and one of the major powers in the world. This plan for the coming years indicates key sectors and detailed objectives (Wininger, 2021).

Although the reform aims to be more open to the world, national interest prevails as do most states. Encouraging new industries through the legal framework not only allows China to strengthen the competitiveness of its domestic companies on the international scene and to better control them, but also to attract foreign companies. Many foreign companies are still torn between the attraction of the huge Chinese market and the respect of their rights. The reform can improve foreigners' confidence in the Chinese system and therefore attract more foreign capital, as discussed in the "Guiding Opinions on Attracting Foreign Investment" of the Ministry of Commerce of China in 2013 (Poon, 2021). Foreigners are then expected to develop their technology in collaboration with Chinese companies.

### 1.1.3. Influence of the reform

China has often been accused of infringing and stealing intellectual property and industrial know-how. However, looking at long-term trends, China is shifting its economy from low value-added export products to Industry 4.0 technologies such as semiconductors, electronics and biotechnology. In line with this logic, China must strengthen its system of protection of intellectual property rights, which would also benefit foreign companies that could more easily license certain technologies in exchange for royalties or establish their activities locally (Menaldo & Wittstock, 2021).

Chinese companies applied for more international patents than US companies for the first time in 2019. The country is becoming the country with the most patent applications and has taken the number one position in terms of international applications under the Patent Cooperation Treaty (PCT) (BOFIT, 2021). It is possible that China will eventually become the benchmark for technology, setting up new standards for the world and protecting them as well as possible.



More and more countries are already turning towards China, reducing their dependence on the US. This focus on a partnership with China occurs in many parts of the world, including Europe (Brattberg et al., 2021). The elaboration of such a scenario is certainly already taking place in regions where China has the most influence, such as certain Asian and African countries. China is increasingly showing the ability to reach areas that were previously inaccessible to it because of loyal US allies and the undisputable influence of this superpower. An extreme case would be that China's sphere of influence is so large that the United States is gradually pushed out of a world system revolving around China, its economy and its technology, while the US sees its own sphere shrinking.

The Sino-European relationship is better than that between the US and China, as evidenced by the substantial Chinese investment in the EU compared to the US. Europe is included in the New Silk Roads project, while North America, like China's greatest regional rival, namely India, is absent from the programme (Belt and Road Research Platform, 2021). Europe and China do have some differences regarding investment, whether they are in China or in Europe. A major concern is intellectual property protection: Europe blames low levels of protection and forces technology transfer, while China says Europe is too protectionist in creating too many administrative barriers for Chinese companies by strengthening its intellectual property protection institutions (Alexiou & Vogiazas, 2020; Fan, 2021). Europe is very divided on the decision to turn to China or to move away from it. Differences of opinion are very strong between countries but also within them (Wright, 2020). It would not be surprising to see European opinion continuing to be very divided on the topic with, on the one hand, a desire to be part of a grand project that could stimulate growth in the Union from a macroeconomic point of view and increase the number of opportunities at the microeconomic level, namely joining China in its One Belt One Road project. On the other hand, the protesters fear that a power with a rather distant culture, values and lack of transparency will take total leadership of the world (Garcia-Herrero & Xu, 2019). China is increasingly likely to be favoured by Eastern European countries that are less developed than those in the West. The plan to reform intellectual property by 2025 in China and to make the country the global example in intellectual property a decade later could also sway the opinion of more countries and thus strengthen the ties between China and Europe. This strong assumption would also have a significant effect on all countries between Europe and China, which could benefit from the increased quantity and quality of trade.

#### 1.1.4. China's geoeconomic expanses

Asia saw the effective creation of the Regional Comprehensive Economic Partnership (RCEP) in 2012, a grouping of countries in Southeast Asia and Oceania that aims to create the largest free trade area that accounts for nearly thirty percent of global GDP (Shimizu, 2021). The RCEP gives China an opportunity to increase the influence of the country and the region by developing the least developed economies that are part of the treaty. China, which has no enemies but, according to its culture, only partners, also takes advantage of these partnerships to build ties and, consequently, to influence regional rivals such as Japan or South Korea, major US allies in Chinese neighbourhood (Khan, 2021). The legal text of the RCEP contains an entire chapter on intellectual property. The agreement aims to facilitate cooperation, cultural exchange and promote innovation and creativity, while recognising that member countries have different

levels of development. It requires the ratification of multiple international multilateral agreements (The ASEAN Secretariat, 2020). By joining the partnership, China is forcing itself to reform its intellectual property protection system, but it is also pushing other adhering countries to comply. It happens to be a great lever to continue its geo-economic development. The RCEP allows member countries to move away from US rules on intellectual property, but more importantly it allows China to set a new policy and global standard on intellectual property protection and to attract capital from multinationals to strengthen its development and influence abroad (Khan, 2021). The RCEP is not an institution that will allow China to fully benefit from the system yet as it is still led by the United States with the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). However, it is only a matter of years before China will eventually be able to fully lead such an international system (Su, 2022).

The RCEP also gives China a southern and eastern expansion into the highly strategic Indo-Pacific region, which accounts for almost two-thirds of the world's economy and more than half of the world's population (The White House, 2022) and into the strategic South China Sea thanks to ASEAN's members joining the partnership. At the same time, the country is also extending its influence westwards, starting with reducing economic disparity within China (Jain-Chandra et al., 2018) but also further toward Europe and even in other directions to the rest of the world through its New Silk Roads or One Belt One Road project aiming to link every region of the world. Xi Jinping, the Chinese president, introduced the concept in 2013 and it is increasingly becoming a reality with more than 100 partnering countries and some projects already materialised. The goal of this initiative is to create peaceful cooperation between member countries in order to stimulate mutual development. The New Silk Roads extend as far as Western Europe with, for example, a railway line crossing the Eurasian continent from end to end. This Chinese operation clearly has a geo-economic and geopolitical stake that aims to strengthen its influence in Asia but also to extend it to Europe, Africa and beyond in order to regain China's historic dominant position (Beeson, 2018). Although the initiative is only eight years old, there is already talk of 2.0 version thanks to China's reforms, particularly on intellectual property rights. For the project to work, it needs to be more than a one-way street, i.e. China needs to open its market wider to companies from participating countries. However, this comes with a certain reciprocity: Chinese companies must be treated in a fair and friendly manner (Rana & Ji, 2019). They should then enjoy the same protection in the member countries as in China. The country thus acts not only to develop its own legal framework but also that of its partners (Ali et al., 2020). Although this seems to be a positive-sum game promoting peace, cooperation and development, it is easy to imagine that China will retain more influence over the countries it expands into than the other way around. China will most likely take advantage of its position as an economic giant to put pressure on some governments that have been seduced by the Chinese development offer to change or direct their choices in international institutions to defend Chinese interests, as it was the case with Greece in 2017 (Smith, 2017).

## 1.2. Chinese investments in Belgium

Since its accession to the World Trade Organisation (WTO) in 2001, China has grown almost exponentially (Permanent Mission of China to the WTO, 2011). By taking on the role of the world's factory, it has enabled many countries to produce at lower cost. This position on the

world stage has helped China to become the main economic partner of many countries, sometimes to their detriment. It has also allowed the former Middle Kingdom to amass a huge amount of cash (Troutman, 2013) and, now that it is steering its economy from producer to innovator, it is using its resources to capture as much technology as possible and to satisfy its power needs. We are in a paradigm shift. Whereas a few years ago China was seen as a market opportunity, European countries are increasingly concerned about the potential risks of working with China. China is proposing an alternative system of governance to the one in place, wanting to develop a pivot from the American model to its own and, consequently, increase its influence. As the relationship between the United States and China becomes increasingly complex, the issue of Europe and influence within it is of primary importance. In order to respond to this challenge, the European Union has put in place a law requiring member countries to identify their strategic facilities and sectors and to control foreign investments; especially those made in these strategic industries and infrastructures (van der Putten, 2019). Belgium sells itself to China through its position in Europe and its place on the European political scene in order to attract new capital (FPS Foreign affairs, 2015). Indeed, Chinese investments in Belgium reach around 500 million dollars per year (Textor, 2021). They mainly take place through companies, but it seems as if the Chinese Communist Party (CCP) could be involved, at least indirectly, in this matter. Could it be to acquire technology, gain market access or are there political reasons behind these investments? Let's examine whether Belgium is favoured by China compared to other European countries and the Chinese motivations.

#### 1.2.1. Is China investing in Belgium for geopolitical reasons?

Before asking whether Chinese investments are intended to influence policy decisions in Belgium, it makes sense to understand the Chinese strategy in terms of foreign investment. In classical economics, it is customary to consider the most developed countries as exporters of capital while the least developed are recipients of foreign investment. This rule does not apply to China. It has been, and some would say still is, a developing country. However, even if considered as a less developed country, it is the largest buyer of companies among developed countries. This leads, through access to new markets and technologies, to a virtuous circle allowing China to increase its investments within developed countries in order to pursue its goals (Tvaronavičienė, 2019). Chinese investments in Europe are substantial and accounted for €10.6 billion in 2021 with a growth of about 33% compared to 2020. Despite these high figures, the capital committed remains very low since 2013.

Belgium is not ranked among the most attractive countries, while its closest neighbours (The Netherlands, France, Germany and the United Kingdom) are at the top of the list. Moreover, there is a clear trend of decreasing foreign investment by Chinese state-owned enterprises (Kratz et al., 2022). Although located in a region that seems fertile for Chinese investment, Belgium chooses to promote its country to Chinese companies. Belgium seeks to attract this capital and to stimulate its economy and development by emphasising its strategic position, considered as a gateway to Europe but also as a logistical platform, and its advantageous tax regime (FPS Foreign affairs, 2015). Chinese companies have been able to and can find within Belgium a favourable climate for their activities. Their main criteria are multilingualism, fairness between companies, regulatory stability, a liberalised utilities market, strong multimodality

(ports with access to the sea, airports, motorways, rivers and canals, railways) with good and sufficient infrastructure and political stability. They are, however, more reluctant to everything related to the high labour costs (De Beule et al., 2011). Belgium is also a country with a high level of innovation and a relatively low risk/opportunity ratio, which makes it rather attractive to China (Damman, 2018). In fact, it seems that the biggest investments are made in engineering with the takeover of Punch Powertrains by Yinyi Group (Cauberghe & De Leenheer, 2016), in logistics with the establishment of Alibaba in Liège and in port infrastructure with COSCO's stakes in the ports of Antwerp and Zeebrugge (Leterme, 2020). The Chinese investments are all part of the large Chinese Belt and Road Initiative (BRI) project, which aims to bring the world closer to China and improve trade by coordinating laws, ensuring connectivity between infrastructures, stimulating trade, integrating different actors financially and connecting people (European Bank for Reconstruction and Development, 2017). This project is broken down into a whole series of sub-projects: maritime, land, energy, digital, commercial, or even space roads. The takeover of Punch Powertrains could be characterised by China's growing need for technology to meet its five-year 'Made in China 2025' plan. In this case, to reduce the country's dependence on imported technology by owning it. The plan in question is to enable China, by 2025, to assert itself and secure its position as a global power (Institute for Security & Development Policy, 2018). The issues surrounding logistics appear to be more crucial as they do enter in the Belt and Road Initiative. They have raised more debates and are still viewed with suspicion by some actors. Indeed, it is likely that the real Chinese influence comes from examples such as Alibaba or COSCO.

The BRI is not investments made in random locations and for uncoordinated reasons. In order to determine the ideal location, companies rely on many factors. Financing is mainly driven by economic, geographical, and geopolitical interests. Belgium offers a very good combination of these. Economically, the country is relatively stable and wealthy compared to many other countries in the world. Despite its expensiveness, it offers a skilled workforce. Geographically, Belgium is ideally located in Europe and is considered as a gateway to other Western and even to Central European countries. It has access to the sea with important port infrastructures and an efficient multimodal network, such as in Liège where goods can be transported by plane, truck, barge and train within a few kilometres. The geopolitical component, although normally secondary, is not to be neglected (Leterme, 2020). Belgium is home to many European institutions and could be influenced at European, national or regional level by the economic weight of China. China could also take advantage of the disparities in wealth between the north and south of the country, buying up companies like Punch Powertrain in the north for their technology or putting pressure on the south to obtain more advantageous conditions in order to pursue its development. Wallonia could be more inclined than Flanders to accept some deals with special conditions to stimulate its economy and to speed up economic recovery. This was the case in Gosselies with the promises of investment from Thunder Power, a Chinese electric vehicle manufacturer wishing to establish itself on the former Caterpillar site. The project was eventually delayed and failed (Businaro, 2021; Lefèvre, 2022a). Of course, Alibaba and COSCO are not the only investors. By 2017, Chinese investors have taken shares in 65 companies operating in Belgium for a total of 18,586 workers (Renard, 2017). Although these companies are not controlled by the Chinese Communist Party, it is clear that the Party guides its international flagship companies through various measures to ensure that they move in a direction compatible with the interests of the People's Republic of China.

### 1.2.2. Alibaba

In 2018, China's Alibaba Group and the Belgian government reached an agreement for the country to join the electronic World Trade Platform (eWTP), an initiative started by Jack Ma in 2016 with the aim of "contributing to the creation of a global trading system that uses cooperation and technology to strengthen SMEs, support the participation of women and youth, and facilitate global consumption". The project now has collaborations in six countries (Electronic World Trade Platform, 2022). Belgium is the only member of Europe and, more generally of the West to have taken part in this initiative. Shortly afterwards, in 2019, an intelligent logistics centre was built in Liege, using Chinese equipment and European labour. According to the diplomatic representative of the Chinese embassy in Belgium, Zhang Chi, this Alibaba project is part of the New Silk Roads (Huaxia, 2021). He argues that this project will unleash the economic potential for European companies by benefiting from global trade, especially with the Chinese market (Staff, 2018). Alibaba's development in Liege has also brought with it trains directly from China, once again in the context of the eWTP and under the initiative of Jack Ma's group (Van Doorgen, 2019). It therefore seems legitimate to ask what influence the Chinese government and its Belt and Road Initiative project has on Alibaba's activities, given that its establishment in Belgium is part of it. Indeed, the company, as a player in information and communication technologies, operates in sectors identified as being of capital importance within the 14<sup>th</sup> five-year Chinese plan: Made in China 2025. Moreover, the eWTP promoted by Jack Ma fits perfectly into the New Silk Roads project both in practice, where each logistics centre corresponds to an important passageway of the official project, and in the rhetoric; a real copy of the government's discourse (Leterme, 2020). The main fear is that of espionage. Chinese companies are obliged to collaborate with the intelligence services of their home country. This could mean that data collected by Alibaba is transferred to this national organisation. These potentially sensitive information could represent a political threat (Belga - La Libre, 2021). Following these suspicions, the Chinese embassy in Belgium reacted firmly by denying the facts and emphasising that the risks were exaggerated. It concluded by stating: "We hope that the parliamentarians, institutions and media concerned will abandon ideology and prejudice against China, deal with practical cooperation in various fields between China and Belgium in an objective and fair manner, and provide a fair, just and non-discriminatory investment and operating environment for Chinese enterprises in Belgium" (Embassy of China in Belgium, 2021).

Indeed, it is appropriate to qualify the statements concerning Alibaba somewhat. It is true that there seems to be a risk, but it should not be forgotten that the company is privately owned with a rather diversified shareholder base and that its primary goal is profit. It is not a state-owned company, so it has more freedom (Rédaction 7sur7.be, 2021).

### 1.2.3. Zeebrugge and Antwerp

The participations in Belgian ports are probably the second example of Chinese investments in Belgium. China COSCO Shipping is not only one of the largest players in the marine freight industry, but also a major investor in Europe. In Belgium, the Chinese state-owned company has minority shares in the port of Antwerp and 90% of the only port terminal in Zeebrugge. Like any company, COSCO's mission is to be profitable and to grow. However, this is not its only goal. The

company also has to show loyalty to the Chinese government and the Chinese Communist Party. The interests of the Party and the company seem to be aligned, as the company's development is, like Alibaba, part of the New Silk Roads (van der Putten, 2019). On a European scale, Chinese companies have acquired 14 European ports between 2013 and 2019. Chinese investments are a source of opportunities but also of threats. The acquisition of a majority stake in the terminal of the port of Zeebrugge has led new Chinese companies to investing in the port as well, such as the Shanghai Lingang group with its 85-million-euro investment in the port (Zhang, 2019).

The main dangers of investments in infrastructure such as Zeebrugge are economic dependence and therefore political influence. In the case of the same company's acquisition of the port of Piraeus in Greece, it had such an impact on the country's economy that it openly deviated from European majorities and adapted its discourse to suit Chinese interests. In 2016, Greece opposed EU statements denouncing China's actions in the South China Sea, also vetoed a condemnation of China on a human rights issue, and voted against the establishment of EU mechanisms to control foreign investment (The Brussels Times, 2019). Indeed, the New Silk Roads project, of which the port investments are part, aims to create better and new opportunities for Chinese economic development by increasing bilateral economic and diplomatic collaboration with countries. There is also an underlying objective of economic and geopolitical influence towards these same countries (van der Putten, 2019). As a result of massive Chinese investments, Belgium has become more vulnerable to the influence of the Chinese government, but it is not at the Greek level.

#### 1.2.4. Threats identified by Belgian State Security

The State Security Services have described Belgium as a haven for Chinese spies. They have identified several anomalies. This is explained by the country's strategic location and the number of EU and North Atlantic Treaty Organisation institutions it hosts (Crawford & Martin, 2019). Suspicion of Chinese espionage within the Maltese embassy has been detected by intelligence services (Rettman, 2020a). In addition to institutional espionage, China is also accused of posing a risk of scientific, medical and military espionage to meet its large need for vaccines due to its population size, but also to capture the knowledge of industrial groups in terms of biological weaponry (Rettman, 2020b).

Despite all the threats posed by Chinese investments to the stability of the existing economic and political model, it is undeniable that China's business situation has improved greatly in recent years. The business environment still attracts many companies that would like to trade in it, and the country is still the largest recipient of foreign capital. This improvement is the result of economic reforms towards greater liberalisation. Discrimination in law enforcement remains a major issue (Dadush & Weil, 2021). In the same vein, it is also more difficult to invest in China than in Europe or the US. The Chinese economy, although more open than before, is not at the level of the West and is still much more restrictive, especially in services and in many of the industries considered strategic.

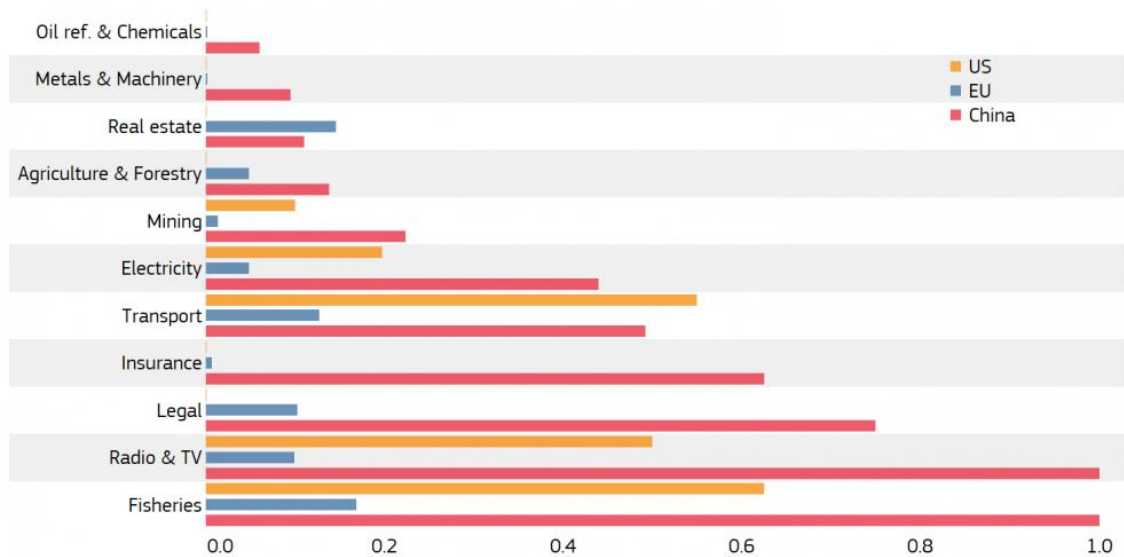


Figure 4: Comparison of FDI restrictions in various sectors (0 = open, 1 = close) (European Commission, 2022b) ©OECD 2019

This results in far more Chinese acquisitions of European companies than European acquisitions in China. In order to enter the Chinese market, a Western company must, in many sectors, enter into a joint venture with a Chinese partner. This involves technology and intellectual property transfers (Dadush & Weil, 2021), posing risks for the long-term competitiveness and even national security.

### 1.3. Chinese market specific restrictions and access developments

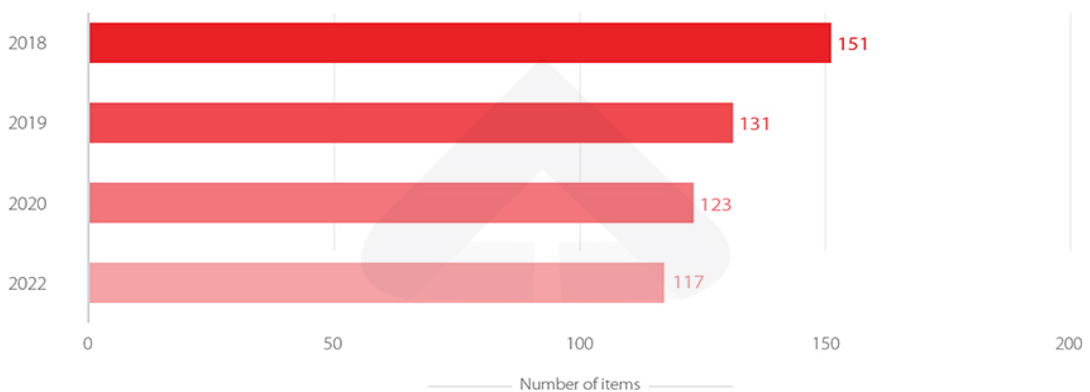
Market openness is one of the main characteristics of Europe (European Commission, 2022d) while the EU has no trade agreement with China (European Commission, 2022a). China, on the other hand, is quite protective and rather proactive in order to make its national and state-owned companies world leaders in strategic industries. To achieve this, the country protects its companies through strong intervention in the economy (European Commission, 2022e) with measures such as market opening to a greater or lesser extent, licensing and investment restrictions. These companies do not operate in a market economy and some are heavily subsidised to make them more competitive than their international competitors (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). These subsidies take the form of tax benefits and low interest rates. These allow the financing of company acquisitions, most of which are in Europe (García-Herrero & Wolff, 2020). These are only accessible to a limited extent to foreign companies, which have to fulfil specific conditions in order to benefit from them. In fact there is discrimination against foreign companies regarding subsidy allowance (European Commission, 2022e). Moreover, their access to the Chinese market is often conditional on the creation of joint ventures or technology transfers, leading to an imbalance in competitiveness on the Chinese domestic market (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). Companies willing to establish operations in China have to consult China's Negative List for Market Access. If it appears that their activities

are part of it, they must comply with the prerequisites of partnering or even transferring the technology.

### 1.3.1. China's negative lists

The limitation of access to the Chinese market is based on lists established annually by the Chinese Ministry of Commerce. They are officially called "Special Administrative Measures on Access to Foreign Investment" and "Negative List for Market Access". The former concerns only investments while the latter focuses on operations within China. There is a final list, also on investment, which focuses on Free Trade Zones. These lists indicate the sectors in which foreign investment and, respectively, operations are controlled and therefore subject to verification. These lists also provide with specific fields that are so strategic for the Chinese government that it is strictly forbidden for a foreign company to invest or operate in. There seems to be a trend towards openness in China. There were 151 industries with restrictions when the market access list was created in 2018 and there are only 117 today. The lifting of a series of restrictions for the financial sector and the introduction of new media news are the main features of this new list (China Briefing, 2022).

China's Market Access Negative List: Number of Items (2018-2022)



Graphic © Asia Briefing Ltd.

Figure 5: Evolution of China's market access negative list in number of restricted items (China Briefing, 2022)

Although there is a clear decrease in the number of restrictions and bans, which is an indication for an emerging trend towards openness, markets where European companies are highly competitive remain difficult to access. This is the case for the pharmaceutical and IT industries. Moreover, just because a product or sector has been removed from the list prohibiting or restricting foreign investment does not mean that it has also been removed from the list but dealing with market access. It might even have been added to it (Santos & Fermont, 2020). More than 40 percent of companies have missed out on business opportunities in China over the past 7 years due to market access restrictions and legal barriers to entry (European Union Chamber of Commerce in China, 2022). The removal of some sectors from Chinese lists is not done out of charity but because there is a need for investment in a removed sector or the future presence of a foreign company represents a low economic risk. When an industry is delisted, it is usually because there is a domestic monopoly already in place and a foreign firm will have difficulty to set up operations in that market (Santos & Fermont, 2020).



### 1.3.2. Chinese cyber security

Recent cyber security laws in China pose new challenges for foreign companies wishing to operate in that market. Some laws might even take them out of China, either by choice, because their activities would no longer correspond to what is allowed as a foreigner in this country, or as a result of a forced closure for non-compliance with the law. It is very difficult with these laws to make decisions with all the cards in hand. Indeed, one of the major parts states that a company must have the data used for activities in China on Chinese servers. This centralisation not only poses a risk compared to a decentralised cloud and possible third-party interference in the company's affairs (Deutsche Vertretungen in China, 2018), but it prevents companies from aggregating it with their world data and therefore taking the right conclusions for its operations in China. This can lead to missed opportunities or, even worse, unidentified threats or a breach of other laws. Between the need to adapt administratively or even have to redesign products, the new competitive advantages of local companies and the interpretation of the law, often set out in a series of recommendations, it can be complicated to normally operate for foreigners (European Union Chamber of Commerce in China, 2022; Santos & Fermont, 2020). The law is so broad and open to interpretation that it is very difficult for companies to know whether they should take it into account for their operations in China or not. If the company concerned does not take it into account when it should, and violates it, sanctions could be taken against it: up to and including closure of operations in the country (Deutsche Vertretungen in China, 2018).

There are also other problems such as: access to private and secured communication channels through which confidential information can pass; additional costs involved in complying with the new laws; Chinese standards that are used by the law and which are not the same as the international ones, implying the use of Chinese equipment with all the potential risks and loss of market share of foreign suppliers that this entails; potential discriminatory interpretation of the law, etc. (Deutsche Vertretungen in China, 2018).

### 1.3.3. IP-related access

China does not only take measures to favour its domestic companies to outperform others on a global scale, relying on the country's economic weight, but also protects its domestic market to limit foreign competition. This is the case for European companies which, although they have rights to strategic technologies, do not always have the possibility of protecting them when these are infringed. If companies with intellectual property rights start legal proceedings outside China, there may be pressure from China or even fines to put pressure on the company concerned (European Commission, 2022c).

Almost 40% of companies had their intellectual property rights infringed in China in 2022, while 14% had transferred technology in order to maintain access to their market. Of the latter, almost 31% transferred as a result of laws or verbal pressure from Chinese government officials (European Union Chamber of Commerce in China, 2022).

Regarding the development of intellectual property rights (IPRs) protection in China, it would appear that the laws are satisfactory for a large majority (83%) of companies, while enforcement is sufficient for only 54% according to the 2022 Business Confidence Survey organised by the European Union Chamber of Commerce in China. However, this is part of a long-term trend in which Chinese mechanisms are increasingly appreciated by European companies (European

Union Chamber of Commerce in China, 2022). The improvement of the law as well as its practical application remain a challenge. Too many foreign companies are still not satisfied with the Chinese system. It is moving towards the European one as the reforms take place, but still retains its specificities which make it and remain a challenge for all foreign companies (Kang, 2020).

#### 1.4. Soft power

Soft power is a battle of values and ideas to serve a political cause. All countries use their soft power to meet their needs and interests. China, as a global player and with a will to expand its influence, uses its soft power massively. Its strategy for Europe is the promotion of Chinese culture and language, and the use of both traditional and social media to show a positive and welcoming image of the country and the benefits of the considerable improvement of the Chinese economy. It is sometimes difficult to identify the line between the choice of attractiveness on the one hand and the economic coercion usually used in response to sanctions or declarations on the other (Dams et al., 2021). This rather subtle promotion of China is mainly done through Confucius Institutes, which aim to promote educational, economic and political interests by familiarising participants with Chinese thought and local customs (Huang & Xiang, 2019). These institutes are 548 in 154 countries around the world (Rouiaï, 2020). Their location is strategic and corresponds to the Chinese influence strategy which can be represented according to the Guanxi circles theory which is meant to be a series of concentric circles showing the country and its relationship with the world, first on its close neighbourhood, then its distant neighbourhood and finally on the rest of the world as shown on the following figure (Gao et al., 2012).

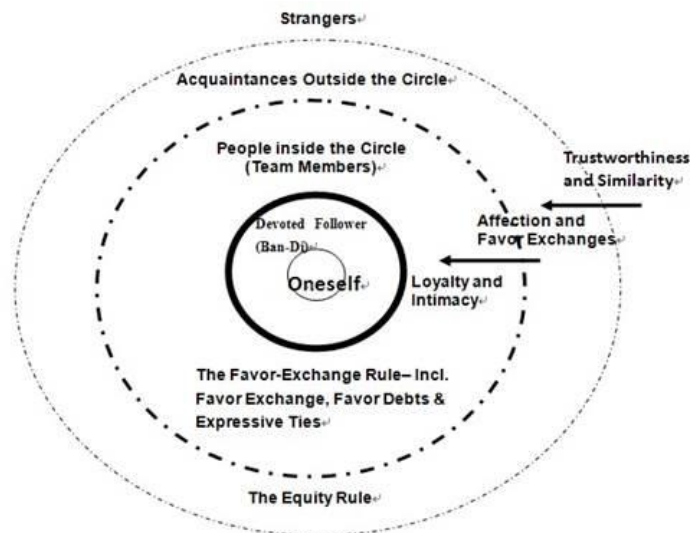


Figure 6: Diagram of Guanxi Circles

Indeed, the first Confucius Institute was opened in South Korea in 2004 (Rouiaï, 2020). This country is in China's close neighbourhood and it is therefore crucial for China to strengthen its influence over Korea; even if relations have sometimes been a bit stormy due to territorial disputes and the pervasive influence of the United States (Hahm & Heo, 2019). The Middle Kingdom is also developing its institutes along its New Silk Roads project to accompany

infrastructure development with cultural deployment. This is currently seen mainly in Central Asia in order to help this region develop but also to extend China's influence in this part of the world (Rouiaï, 2020).

Although there are many Confucius Institutes in Europe, it seems that the effectiveness of Chinese soft power is declining in most European countries as a result of the Covid-19 crisis, repressions in Hong Kong, the transformation of Xinjiang as well as the growing rivalry with the Americans. Because of this decline, China is stepping up its efforts, sometimes aggressively with the imposition of sanctions (Dams et al., 2021). China's prominence in the international arena brings with it heavy responsibilities. The international community will be more vigilant with an economic giant that wants to expand its influence than with a small country with little concern.

## 1.5. Initiatives and solutions put in place by Belgium/EU

### 1.5.1. FDIs regulation

Like China, it is essential for Belgium to identify its strategic sectors and to control the investments made by foreign companies in these industries in order to serve the national interest and limit any potential interference. Controls should not be directed specifically towards China but towards all countries in order to avoid stigmatising the Middle Kingdom and to maintain a positive economic dynamic (Renard, 2017). A foreign investment control has been introduced in Flanders in 2019. To date, there is still none in Brussels or Wallonia, let alone at the federal level. A draft national law has emerged in 2021 (Mussche & Carlier, 2021). This will come into effect on January 1<sup>st</sup>, 2023 for any acquisition of at least 25% of the voting rights by a company established outside the European Union. This is reduced to 10% for sectors identified as strategic, provided that the target's turnover is greater than €100 million in the year preceding the acquisition of the stake. These sectors are "cyber security, defence, electronic communications and digital infrastructure and energy" (Lefèvre, 2022b).

For its part, the European Union has not been left behind. It is even ahead of Belgium. As of 2019, the FDI screening law has been put in place. It became fully operational on the 11<sup>th</sup> of October 2020 (European Commission, 2022f). However, this law does not require Member States to implement screening, but rather focuses on data sharing and harmonisation of the different mechanisms established within the Union. This law has made it possible for Member States to realise the urgency of taking measures if they had not already been taken, whether for economics or public security purposes. As early as 2009, the European Union indicated the future and/or strategic sectors on which countries should be the most vigilant (Fountoukakos et al., 2021). Despite the increasing focus on Chinese investments in Europe, this does not mean that there is reciprocity in market access in Europe and China, to the disadvantage of Europeans (Hanemann & Huotari, 2018).

### 1.5.2. Market access control

In order to regulate the market, regardless of where the company comes from, and to keep the EU competitive, trade defence instruments have been put in place. The EU has a duty to be

proactive in protecting its internal market with a strategic approach (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). These instruments are anti-dumping, anti-subsidy or safeguards measures. The first prevents foreign companies (out of the EU) from selling below the price in the company's home market or below the production costs. The second prevents foreign governments from over-subsidising their companies to such an extent that European ones are disadvantaged. The latter allows European companies to adapt when imports increase rapidly (European Commission, 2013).

It seems that Europe is not willing to use restrictions on industries as China does with its negative list. Very few foreign investments are strictly prohibited; they are only highly controlled in order to identify whether they represent a strategic threat (Simmons & Simmons, 2020). This is the investment screening mechanism also put in place by Belgium. The measures taken by the European Union serve rather to regulate the market so that the companies that make up its economic fabric can remain globally competitive. The others, which directly concern market access, are tools that have already been in place for years in China. Europe would like to strengthen cooperation with China to bring it more in line with the values of the United Nations and to achieve the climate objectives set by the Paris agreements. The EU would also like to achieve a fairer and reciprocal economic relationship with China, to reduce state subsidies, which endanger European competitiveness, and technology transfers (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). All these objectives are rather idealistic and relatively European-centric. They mainly take into account the interests of the Union and western values without addressing the specific issues of the Chinese. China, on the other hand, is creating its own international institutions and gradually taking control of those created by the West (Council on Foreign Relations, 2021).

In order to overcome the difference in market access, the European Union wants to remain at the forefront of research and innovation through its Horizon Europe programme. It is the successor to Horizon 2020. This new plan has been set up in order to respond to the new issues and challenges of the decade, such as 5G and cyber security. It is open to other countries and international organisations (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). Ideally, these countries should have a large scientific and innovation experience. China is one such country (Santos & Fermont, 2020). A total of €95.5 billion will be allocated over the 2021-2027 period and will be spread across all areas of research and innovation with a focus on global issues and European competitiveness (€54.5 billion) (Directorate-General for Research and Innovation (European Commission), 2021). For every euro invested, this programme has the potential to return 10-11 euros (Santos & Fermont, 2020).

### 1.5.3. Consolidating Europe's sphere of influence

China's Belt and Road Initiative is increasingly threatening Europe economically, culturally and geostrategically. This project allows China to make new partners and to retain the old ones in order to lead the pivot towards the Asia-Pacific. Influence in Central and increasingly in other parts of the world such as Africa, South America with South-South cooperation and Eastern Europe must be addressed. It is necessary for all countries and all international organisations to take into account what is really happening. Institutions, companies and politicians must, if it has not already been done, take China into account and understand its ambitions so that they can

respond harmoniously and not be surprised by them. Namely, whether and to what extent it is better to be involved or not in Chinese projects.

In order to meet these new challenges in the relation with China, the European Union has established a response to the New Silk Roads. The trigger for this was the various strategic acquisitions in Europe and the blocking of certain resolutions against China by EU member states in which China has invested heavily (Cameron, 2018). Other aspects such as Chinese debt-trap diplomacy, which consists of allocating huge loans to countries that cannot afford to repay them in order to recover a concession on new infrastructure, probably also played a role. The example of the port of Hambantota in Sri Lanka is probably the best known of all (Jones & Hameiri, 2020). This notion of 'debt-trap' is probably somewhat exaggerated by Westerners. It would be more appropriate to call it economic dependence, as the loans required are too high for what the infrastructure host country can afford to borrow with controlled risk (Carmody, 2020).

The European response is a new investment strategy of €300 billion spread out until 2027. This aims to be a sustainable alternative to the Chinese project (Strupczewski, 2021), which would not take sufficient account of climate aspects (Cameron, 2018). These investments are intended to stimulate trade within Europe and with partner countries in order to protect their supply chains but also to stimulate intra-EU collaboration (Santos & Fermont, 2020). This has been particularly noted in the wake of the Covid-19 crisis, where dependence on China has been greatly marked. These investments must be made based on democratic rules such as transparency and respect for local laws and working conditions. As these values are essential to obtain funding, potential partners will be more careful about their actions in order to benefit from European aid. This is in contrast to China, which is often criticised for its lack of transparency (Seibt, 2021). China, on the other hand, officially promotes a policy of non-interference in state affairs and respect for state sovereignty (Ngamondi, 2020). Two different value systems clash with an equally different soft power: one emphasising freedoms, health and personal fulfilment while the other emphasises collective success and an alternative economic model. Officially, this European investment strategy is not a response to the Chinese project. It is presented as a "European way to connectivity". As it suggests, it focuses on the development of transport, digital and energy infrastructures through cooperation between the public and private sectors (Stanzel, 2019). It is possible that European and Chinese projects will meet and benefit from synergies that will ultimately strengthen Eurasian cooperation, promote peace, multilateralism and the fight against climate change (High Representative of the Unions for Foreign Affairs and Security Policy, 2019). However, it remains to be seen how the democratic components required by Europe will interact in order to provide funding to partners. There is also the question of how this infrastructure will be financed in comparison to China. The EU's external action budget is €123 billion over the period 2021-2027, while this is what the China Development Bank alone has already invested (Santos & Fermont, 2020). There is a clear difference in resources that needs to be addressed.

#### 1.6. Ground reality

Most European governments, including Belgium, view foreign investment favourably. They have taken measures to make their country more attractive to Chinese companies (private or public)

in order to attract capital and to enhance their economic development. However, Belgium faces a political complexity that is felt on the international scene. The fact that the country is divided into three regions often leads to competition between them (De Beule et al., 2011). For example, there is the Agence Wallonne pour l'Exportation (AWEX) in Wallonia and the Flanders-China Chamber of Commerce which perform the same role for a different region within the same country (Flanders-China Chamber of Commerce, 2021b). Such competition between the different regions, the political fragmentation and the lack of a unified image and strategy as a single country may allow foreign companies and institutions to negotiate preferential rates between the regions but also to use this as an opportunity to create tensions within the country. Discussions between the different regions are kept to a minimum and coordination between the different stakeholders is therefore almost non-existent (Crawford & Martin, 2019).

Belgium is trying to take a rather pragmatic approach. It would like to open its doors step by step to see how China behaves and, if this opening is reciprocal, to continue to move in this direction. This is at least what Brecht Vermeulen (NVA), former chairman of the Committee on Home Affairs of the Belgian Federal Parliament and who later joined the EU-China Friendship group, would like to see. Several members of the Flemish far right are said to have rather close ties to China; Filip Dewinter of the Vlaams Belang was suspected of spying for China (Crawford & Martin, 2019). Belgian politicians are not the only ones targeted; a former EU ambassador, Gerhard Sabathil, has also been suspected of the same behaviour (Oxford Analytica, 2020). The presence of important institutions would therefore increase the risk of spies in a territory, and foreign investment in that territory would be a vehicle for the transit of information via spies in addition to the search for economic and political influence (Lau, 2021). These same institutions also bring an increased presence of foreign investors wishing to establish themselves in Belgium in order to lobby for their interests (Renard, 2017).

While in 2018 China welcomed the Sino-Belgian partnership, highlighting the investments made in Belgium and the increase in bilateral exchanges, it also emphasised cooperation in terms of innovation. This is reflected in the collaboration of many large Chinese companies with the Institute of Microelectronics and Components (IMEC), and with the Catholic University of Leuven (Embassy of China in Belgium, 2018) thanks to the rapprochement with the China-Belgium Technology Centre (CBTC) (Université Catholique de Louvain, 2020). The State Security Services warn against the naivety of most Belgian companies and politicians. Although the role of this institution is to protect the scientific and economic interests of the country, there is a non-alignment between the different parties. Some politicians are aware of what is at stake with China and are reluctant to collaborate, while others welcome it with open arms. The State Security Service is sometimes described as paranoid by some stakeholders who feel that fears are exaggerated compared to those of other nations. A document from the State Security Service leaked to a newspaper and helped raise awareness of the potential risks of Chinese investment in the attempted takeover of part of the company Eandis by a Chinese giant. This company could have used Belgian technology for the Chinese military and could have taken over the gas and electricity distribution network in Flanders (Crawford & Martin, 2019; Renard, 2017). It cannot be said that Chinese investments are specifically oriented towards Belgium and its institutions for political purposes. Indeed, it seems more reasonable to say that they follow a trend established by the Chinese Communist Party in a long-term strategic plan whose actions and consequences are difficult to observe with a short-term perception. The Chinese play Go

and not Chess like the Westerners; just like on the geopolitical scene. It is therefore more difficult to identify what is calculated and what is not. However, we can almost certainly identify that China is playing Go on an international scale, placing its “stones” on the global Goban, as was the case with the arrival of Alibaba in Liege or the acquisition of the Zeebrugge terminal by COSCO in order to open up access to the rest of Europe. The country is also playing on a national scale by using the fragmentation between regions to its advantage, by capturing technological resources and knowhow and by playing on short-term western self-interest. The new investment screening system that will come into effect on 1 January 2023 is a major step forward to defend the country's strategic interests. The country should continue to identify and react to any potential threat to its economic future and think with a long-term view.

## B. Legal

The most important institution in China for matters related to intellectual property is the China National Intellectual Property Administration (CNIPA). It is the Chinese equivalent of the European Patent Office (EPO). It has, however, an additional role related to the establishment of intellectual property; it must "implement the Communist Party of China (CPC) Central Committee's principles, policies, decisions, and plans on work related to intellectual property, and uphold and strengthen the Party's centralized and unified leadership on work related to intellectual property when performing its duties". The Chinese body also deals with the preparation of treaties and amendments to existing ones as well as coordination with foreign countries (CNIPA, 2022). While the EPO is an intergovernmental organisation (European Patent Organisation, 2022), CNIPA is an institution with vice-ministerial status, directly under the State Administration for Market Regulation of China (CNIPA, 2022).

China is the largest patent filer with 43.4% of the world's total patent applications in 2021, more than twice that of the United States. This is due not only to the large subsidies offered by the government of the People's Republic of China, but also to a different counting method from many other countries (He, 2021). In 2019, there were 4,380,469 patent applications in the country. This is because the term "patent" is used in China for the grant of a right of exclusivity and not only for the protection of inventions. The Chinese way of counting patents therefore includes patents for inventions, utility models and designs patent. Although there are huge differences and this distorts the statistics, China is still one of the largest filers of applications in any of these categories taken separately (Heath, 2021).

### 1.7. Evolution of the Chinese legal IP system

The contemporary legal system of intellectual property of China is recent. Its foundation is now only 40 years old. In 1982 and 1984, respectively, the laws on trademarks and patents were introduced. This follows the signing of the World Intellectual Property Organization (WIPO) convention in 1980 (Pisacane & Zibetti, 2020). The implementation of the system was then extended with the law on copyright in 1990 as well as the anti-unfair competition law in 1993. The application of these laws does not only correspond to China's desire to join the World Trade Organization (WTO), which China joined in 2001, but also corresponds to the will to, already at that time, promote and develop a legal system that will enhance scientific and technological development. This was done with the transplantation of foreign laws modified to fit the Chinese cultural and historical context. At the same time, the country has developed its institutions in order to be able to continue to evolve accordingly to the expectations of the Chinese people but also of international organizations in which China participates (Handong, 2020). In order to access the WTO, China had to completely reform its laws and legal system to comply with what is required. It is then that the system of independent judicial review of power was then set up. It allows to appeal following an administrative decision (Pisacane & Zibetti, 2020). Despite China's accession to the WTO, it was designated as "both the largest producer and the largest consumer of counterfeit products" (Muehlfeld & Wang, 2022). Many complained about Chinese theft of intellectual property as the government seemed to use China's market power to transfer technology from foreign companies to the country rather than invest in strengthening a



protection system more in line with foreign expectations (Economy, 2018). It seems that more factors than just the government have led to difficulties. From a cultural point of view, Chinese people had to move from a Confucian-inspired system to a more Western system that, on the contrary, prohibited it. The values from Confucius imply the promotion of imitation as it was perceived as a form of recognition of the quality of the imitated product. Other aspects such as social and political also involved a difficult establishment of the law. On the one hand, Chinese history leads to a mistrust of foreigners, thus a reluctance to adopt similar models, and on the other hand, China has, for most of its history, been a self-sufficient power with a strong culture of its own (Pisacane & Zibetti, 2020).

Xi Jinping's rise to power in 2013 marked the beginning of a great advance in laws. They have been pronounced, revised or amended at a very fast pace in all areas, including intellectual property in order to transform China into an innovation power. Although technology transfers have been increased in some industries such as computing and networking equipment, under the banner of national security (Economy, 2018), President Xi focuses on developing intellectual property rights to improve China's competitiveness (Handong, 2020). Their improvement is also aimed at foreigners. China therefore expects its foreign partners to also improve the protection of intellectual property rights of Chinese companies. This goes hand in hand with the vision of China as a global innovation hub. It is necessary for the country, to reach its goals, and once reached, to have the rights of Chinese companies respected to maintain its position (Economy, 2018; Handong, 2020). The President of the People's Republic of China has a strong influence on the establishment of intellectual property in his country. The commissioner of CNIPA says in 2020: "... we have further studied and carried out the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and conscientiously implemented General Secretary Xi Jinping's important instructions on IP work..." (CNIPA, 2020a). The changes initiated by the president seem quite effective and numerous. From 2016 to 2020, CNIPA has been restructured. Many laws have been amended. China has moved from 29<sup>th</sup> position in 2015 to 14<sup>th</sup> in 2020 on the Global Innovation Index and from 78<sup>th</sup> to 31<sup>st</sup> in the World Bank's Ease of Doing Business Rankings over the same period. The quality and efficiency of the system has improved as has international collaboration, whether with companies through licences or with international institutions (CNIPA, 2020b).

#### 1.8. Major differences between Chinese and European IP systems

The European and Chinese legal systems are quite similar. This is because both China and the EU member states are part of the WIPO as well as the Paris Convention of 1883, which is the basis for most of the current IP models (WIPO, 2010), the Berne Convention of 1886 on the rights of authors and their works (WIPO, 2005), and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), which provides minimum standards in terms of intellectual property establishment, enforcement and dispute resolution for WTO member states (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c).

Despite similarities, there are still differences. The first one is that in China, all IP rights, except copyrights, must be registered if one wants to enforce them, while it is still possible to enforce

unregistered rights in Europe if there is a proof of earlier use. The same goes for the protection period. The right is only secured once it has been granted in China. It is not possible to start a procedure before. In Europe, it is possible to start proceedings before the right is granted, except in the case of patents for which proceedings cannot be started once the right has been granted but with retroactive effect up to the date of application (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c). In other words, IP registration in China is very important as there is no alternative to have its IP protected. Moreover, the property to be protected is vulnerable during the time of the CNIPA procedure for obtaining the right, which takes on average 20 months for a patent (CNIPA, 2020b). The total time to obtain a patent, from scratch, can be extended by several months or even years, up to 5 years, due to the processes during the international phase of the multilateral Patent Cooperation Treaty (PCT).

As far as brands are concerned, China, unlike Europe, does not recognise scents. It does not allow motion, hologram and touch trademarks as well (Chen & Jones, 2022). Moreover, a European trademark registered in China should have its Chinese equivalent registered. Although this is not required by law, it is advisable to do so in order to avoid any imitation with a translation of the trademark (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c). Trademarks can be registered using the International Trademark System, better known as the Madrid System. This simplifies the process of registering trademarks in up to 128 countries at a reasonable cost (WIPO, 2018). It uses the Nice Classification, which divides goods and services into 45 different classes (WIPO, 2011). China has chosen to subdivide these classes. It is therefore possible that the trademark applied for may end up in a sub-class that does not really fit with what the applicant wanted (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c) and would possibly result in the trademark not being optimally protected, or at least not being protected in the way the applicant intended.

Patents in China and Europe also have differences. Firstly, China counts patents for inventions, utility models and designs. In Europe, only invention patents are considered as patents (Heath, 2021). Utility models are a type of patent that does not require a substantive examination, offers 10 years of protection and is exclusively intended for the protection of technical inventions. They offer less protection than invention patents, and are usually easier to be granted (Rieko, 2021). They are very common in China whereas they are less common in Europe as only 17 countries in the European Union have incorporated them into their national law. China is the country with the highest amount of utility models in the world with over 95% of the world total (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c). Pharmaceutical companies are quite specific in terms of intellectual property. They benefit from the Patent Linkage System which does not exist in Europe but does exist, among others, in China and the United States. It was set up in order to achieve a balance between the innovation of pharmaceutical companies and generic drugs (Li & Tong, 2018). It allows for an early dispute mechanism before generic drugs are approved by the market and health authorities. It is possible for these companies to request an extension of the validity of their patent, but this cannot exceed 14 years in China from the regulatory approval date, compared with 15 in Europe. It is also possible for any company, regardless of the sector, to request an extension of the 20-year legal term in the event that there are abnormal delays on the part of CNIPA that are not caused by the applicant, whereas Europe does not mention it. Unlike in Europe, it is compulsory

to register designs in China if one wants them to be protected. The main requirement is novelty. Already disclosed designs will not enjoy any protection. The design is then only protected for a period of 15 years. In the EU, it is possible not to register a design and still have rights, even if they are limited to 3 years. Therefore, everyone has a period of 3 years after public disclosure to register it and enjoys 25 years of protection (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021c).

## 1.9. Getting protected

### 1.9.1. Patents

There are three ways to obtain patent rights in China: apply directly in China (which is quite rare for European companies), apply in a member country of the Paris Convention and then apply for a patent in China claiming priority from the foreign application, or use the Patent Cooperation Treaty (PCT) (cf. 1.9.2) by choosing China as one of the countries in which protection is wanted (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

Patent applications must be made in Chinese and, for those that are not, an accurate translation must be provided. Translation is often a problem for companies as it only takes a mistake in language for the rights to be either denied or different from what the applicant would expect (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

#### 1.9.1.1. Invention patents

All inventions must be a technical solution solving a technical problem. It is usually an improvement of a product but it can also be a whole new technical solution or a process as long as it has a practical utility. In order for the rights to be granted when applying for a patent, the criteria of novelty, inventiveness and industrial application must be met. The latter implies that the invention protected in the patent must not have been disclosed by any means anywhere in the world, either within another intellectual property organisation or by any other means. When applying, a priority delay of maximum 12 months is granted but it does not have to be used. A grace period may be granted after an invention has been disclosed to allow the inventor who disclosed it before it has been protected to retain the novelty. Invention patents are usually granted after 3 to 6 years because they require substantial examination. Once granted, they are valid for maximum twenty years starting from filing date or from the priority date, provided that the fees are paid annually (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

As mentioned before, it is possible for pharmaceutical companies applying for invention patents related to drugs to benefit from a patent term extension. The patent term extension can also be granted if the CNIPA made its duties in an abnormal delay, whether 4 years or more after the filing, 3 years or more after the request of substantive examination or any unreasonable delay. The patent term extension can be requested within 3 months of the rights being granted (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

### 1.9.1.2. Utility models

Utility models are easier to obtain than invention patents as they only require a formal examination and the process of granting rights takes only a year. However, they offer less protection as a more cursory examination makes it easier to invalidate. In addition, they have a validity of 10 years from the filing date or from the 12-month priority date. As protection in China only begins once the rights are granted; it is very common to apply for a utility model at the same time as an invention patent and then abandon the utility model when the patent is granted. This is done in order to benefit from protection more quickly, within a year, and not to have to wait any longer to defend one's invention. If the application for an invention patent corresponding to a utility model is not granted after a substantive examination because it does not meet invention patents criteria, the utility model will also be invalidated (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

### 1.9.1.3. Designs

Although it is necessary to register designs just like other categories of patents to get protected, they are very different. While invention patents and utility models must have a practical application, this is not required for designs. Indeed, they should only concern an aesthetic aspect of an object outside of the technical solution. If this was the case, it would not be possible to prevent someone else from using it for technical reasons, in which case a utility model or an invention patent would be more relevant (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

If designs are made available to the public before the filing date, it will no longer be possible to obtain rights on them. Although they do not necessarily have to be registered in Europe, it is better to do it anyway. If it hasn't been properly registered before the disclosure, China can provide a 6-month grace period if the reveal occurs in a trade fair which has the support of the Chinese government. If the design is registered in Europe, it is possible, as for other patents categories, a priority date of 6 months is granted to keep the novelty criterion. It is therefore advisable to register designs in Europe so there can be 6 months to look back if, in the end, one wants it to be protected in China too. In Europe, it takes about a year for the rights to be granted and they last 15 years from the filing or from the priority date (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

The novelty of designs is very important. As they can very easily be imitated, it is necessary to show the difference between the state of the art and the design (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a).

## 1.9.2. Patent Cooperation Treaty (PCT)

The PCT is very important for anyone who wants to establish intellectual property rights on their invention simultaneously in several countries. The PCT application has to be filed within 12 months after the original application to retain priority. It is then published 18 months after the local application. The two main advantages of this process are the extension of the priority claim up to 30 months before entering national phase, and the cost efficiency. The former offers time

to make strategic choices. If a company is not yet sure that it wants rights in a certain country, it has up to one and a half additional years to make its choice and, by following the evolution of the market, to see if it is worthwhile or not. Regarding costs, it is possible to ask for a preliminary examination before entering the national phase. If it turns out that a patent application does not quite meet the criteria during the preliminary examination, this leaves time to amend the application to avoid being blocked for the same reasons in all the countries in which one is seeking protection in, with all the costs that go with it. PCT costs are, at first sight, higher than a classical direct procedure, especially if the goal is only to be protected in a very limited number of countries. The PCT process is not free of charge but can, thanks to the verifications made before the national phases, allow avoiding additional costs later on. After the document has been amended, it is possible but optional to request an examination report. If this one also comes negative, it is still time to determine whether the patent request is really interesting or whether it is better to drop it before facing additional costs in the different countries, which will in turn re-examine it. It is also possible to postpone costs for several months (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021h). The costs in each national institution will be the same as with a direct application, but it will be possible to pay them later on, which can be interesting in case of momentarily low cash flow.

In order to enter the national phase, fees must be paid to each country in which a filing procedure has been started through the PCT. As far as China is concerned, a translation of the international application must be provided. Regardless of how a patent is obtained in China, one needs to be very careful about the translation and to be represented in front of the CNIPA by a local agent. There are deadlines to be respected depending on the different countries in which protection is sought. One must be proactive. The applicant is the only one responsible for the application. He/she will not be requested by a selected country to complete the corresponding national phase. It must be his/her own initiative (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021h).

PCT applications might be complex. It is therefore advisable to directly refer to an IP professional who is at ease with conducting such procedures. It is also important to mention each country is managing its review process independently, an application approved in one country can be rejected in others, therefore, there are no modifications to be made according to the feedback from each national institution (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021h).

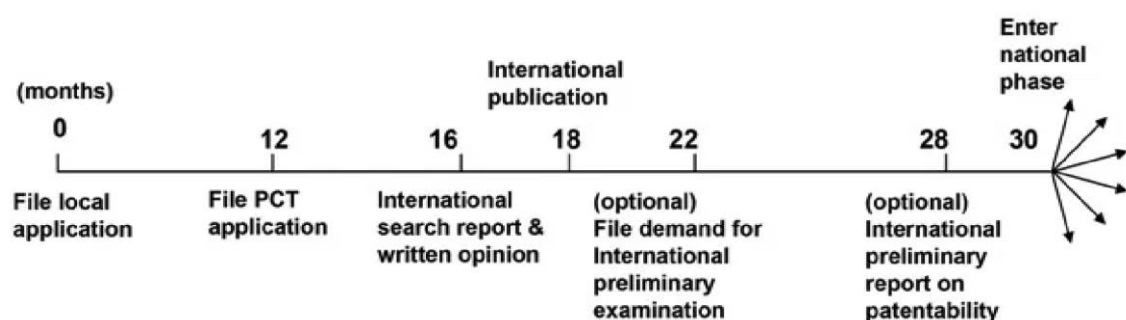


Figure 7: Patent Treaty Cooperation timeline (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021h)

### 1.9.3. Trademarks

There are two ways to protect trademarks in China: via the National Registration System or via the international system, also known as the Madrid Protocol. As seen above, the particularity of China is that it has subdivided the Nice Classification used by the Madrid Protocol. By not going through the Chinese national system, there is a risk that the category of the mark is only in one of the subdivisions, at the discretion of the CNIPA examiner. It is therefore preferable to avoid the international system in the specific case of China, whereas it is more suitable for all countries that have not chosen to subdivide the Nice classes (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e). The Madrid Protocol will therefore not be further developed in this context of China.

Even if one can hope to have one's trademark protected in China within 12 months, whereas one has to wait around 6 more months with the international system, going directly through the Chinese system does not have only advantages. While it is perfectly possible to apply with the international system in English, dealing directly with China implies, like patents, applying in Chinese and going through a Chinese agent. Again, great care must be taken with the translation of the application (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e).

The Chinese system is based on the first-to-file rule. In other words, the first person to file an application in China is the one who will be granted the rights associated with his application. This opens the door to bad faith applicants who did not hesitate to use this mechanism to take advantage of the system. Even if the regulations have evolved to make bad faith applications illegal and that the regulator has strengthened the controls as well as the possibilities of opposition by anyone, that is to say 3 months after the registration and even 5 years to invalidate a decision by referring to the Trademark Appeal Board, there are several things to be careful of. The first is the subcategory to which the brand belongs. It is customary to fill in several subcategories so that together they correspond to a category of the Nice Classification. Due to this classification system, it is possible that the mark will be reused but in a completely different category than the one the applicant thought of. Then there is also the alphabet difference. It is necessary to protect the mark against translations and transliterations. However, this is not enough. It is needed to establish a brand in China that is strong and in line with the expectations of the Chinese market. The ideal is a combination of a literal and phonetic translation of the brand name but which also has a positive meaning in Chinese. It is therefore highly recommended to study the Chinese market and work with marketing experts and Chinese people to determine the name that will best reflect the company's image. If no Chinese mark is attributed to a brand, there is a possibility that Chinese consumers will name it by a different name than the one given in other countries on their own. It is then necessary to protect this name as well; otherwise, it is likely that another bad-faith company will do it, which could have consequences for the company's local operations. In order to meet the challenge, reviewers must now take into account the context in which the application is made as well as the activities of the applicant. They have the possibility to consult databases, such as PatentScope of the WIPO, as well as to use automatic tools offered by private screening companies. The use of these tools, coupled with manpower, made it possible to alert on 815,000 patent filings that seemed abnormal (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e; Ferrante, 2020; Xinhua, 2022a).

Practically, bad-faith applicants who have made a business out of it are always present and organise themselves in order to reduce their presence in the examiners' databases and thus slip through the net. However, it is more unlikely that a recognized trademark will be registered in bad faith (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e; Ferrante, 2020). In order to find out whether a trademark has been registered in bad faith or whether a trademark idea is available on the market, it is possible to consult free online databases such as WIPO's Global Brand Database. Agents specialised in trademarks can also help but are more expensive. These can however offer trademark-specific surveillance services. It is less expensive to have a first look at the availability of the trademark or, if it has already been registered, to find another suitable mark, to initiate discussions or even to start proceedings if it is a bad-faith registration (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021f).

If a trademark has been found in the databases, it is still possible to oppose its approval but this must be done within three months of its official publication. The procedure takes between 12 and 18 months. It is also possible to apply for invalidation if it is found to have been registered in bad faith or fraudulently. Another option available to recover or stop a trademark is to have it revoked. This can be used when a trademark has not been used for at least three years. The support of experts in the field is strongly advised before any proceedings are taken to ensure that it is worth it while ensuring one's freedom to operate and dispose of one's trademark in the country. For every procedure, it is very important to collect evidence. This often has to be either official or notarised. Trademarks, like any asset, can be traded. There is an online marketplace where potential buyers and sellers meet to buy and sell their trademarks. It is also possible to make direct arrangements with the owner of the desired trademark (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e).

#### 1.9.4. Geographical indications

Geographical indications are also registered as trademarks, although they can benefit from additional alternatives, namely the certification mark and the collective mark. The former can be registered by a control body, while the latter corresponds to the association of several entities that want to group together under the same banner, usually for a speciality from a specific region. This collective mark is very often also registered as Product Quality and Characteristics Markings, given their unique specificity resulting from know-how concentrated in a certain geographical area. The European Union and China have agreed to protect about 100 geographical indications in Europe and the same amount in China (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2020b).

#### 1.9.5. Copyrights

China is part of the Berne Convention. Therefore, there is normally no need to register a copyright to enjoy its use. In the case of China, however, it is recommended to register them in order to avoid any lengthy and costly proceedings that may arise from non-registration. It would be necessary to provide evidence of prior art in relation to the use of the copyright by another

individual (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021d).

According to the U.S. Copyright Office, copyright is intended to protect "original works of authorship as soon as an author fixes the work in a tangible form of expression [...] including paintings, photographs, illustrations, musical compositions, sound recordings, computer programs, books, poems, blog posts, movies, architectural works, plays, and so much more" (U.S. Copyright Office, 2021). Copyright therefore does not protect the idea behind a work but its tangible expression. Software is also protectable, just as it is possible to obtain a patent on it. However, in order to obtain a patent, it is necessary that the software solves a technical problem and therefore has a material application. Not all software is solving technical problems. It is then still protected by copyright. Even an algorithm, if it is part of the source code of software, can be protected (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021d).

The more the copyright determines the competitive advantage of the company, the more it is advisable to protect it, especially if it is easily imitable. However, it is better to keep it secret if it is not easy to copy or if it is difficult to access. It is also advisable to apply for as many rights as possible because copyright could be used in addition to other granted rights to start proceedings, seize and stop counterfeits. It also makes it easier to have counterfeits removed from online sales platforms as well as to avoid having to provide evidence in Chinese to settle a dispute that may arise there (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021d).

#### 1.10. Enforcement of the rights

Since it is imperative that an application is filed and accepted for patents and trademarks, it is not possible to take legal action directly against someone who uses unprotected invention in China, as long as it does not fall under the anti-unfair competition law but then it could be complicated to establish the burden of proof. The same burden of proof issue arises with copyrights which do not need to be registered for rights to be granted but must be proven if challenged. In the case of innovation patents, it is possible to request reasonable compensation from anyone who uses the newly obtained rights following the official publication of the patent application. It is then possible to either start legal or administrative proceedings either where the infringer is located or where the infringement takes place. Ideally, administrative proceedings should be preferred for technologies that are relatively simple and do not require much technical knowledge (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a, 2021e).

In the same vein, two types of actions are also available for trademarks. In either case, it is very important to collect evidence of the infringement in a way that is judicially admissible by the Chinese courts. These must be notarised. The fact of having judicially admissible evidence can possibly be attached to a cease-and-desist letter in order to put pressure on the infringer to cease his activities and not risk legal proceedings which could go as far as prison in the most severe cases. To start an administrative procedure, however, the institutions to be contacted are not the same if it is a patent or a trademark. In the case of a patent, the local intellectual



property office should be contacted. For trademarks, it is the local trademark office of the Administration for Market Regulation (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a; Information Office State Council Of the People's Republic of China, 1994; European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021e).

The process is also the same for copyrights except that it can start as soon as the work is created. It is also possible to start administrative proceedings for copyright infringements. The main difference is the institution that the rights holder has to refer to. In the case of copyrights, the local copyrights administrative departments should be the main institutions contacted (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021d).

Only the courts are competent to award compensation which is calculated according to the loss of the owner of the rights, the profits generated by the infringement or the value of the royalties when it is not possible to determine the extent of the loss or the gain. The maximum amount allowed for compensation is RMB 5,000,000 or €724,245 (as of 22 July 2022) (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021a, 2021e, 2021d). Given the maximum value of offsets, it is often more useful to encourage discussion before starting any legal action with all the costs that this may entail. It is recommended to always start with a cease-and-desist letter.

#### 1.11. Available help and support

##### 1.11.1. In China

China provides additional support to its intellectual property system to facilitate its use. They mainly take the form of databases such as the Patent Search and Analysis database of the CNIPA, the Trademark Search of the China Trademark Office or the National Enterprise Credit Information Publicity System that are freely accessible to everyone, both local and foreign people. The most famous ones are those used for searching any intellectual property right. They are used by companies in order to have a snapshot of their competitors or to identify new players and key technologies. They are also used by subcontractors who analyse these databases in order to provide a detailed report to their clients on where their competition stands. There is also another database called the electronic database of National Enterprise Credit Information Publicity System (NECIPS). It allows anyone to access data on Chinese companies in order to compare them with those already owned, to ensure that the company exists and that it is *bona fide*; at least as far as the information provided by the targeted company is concerned. The China Trademark Office provides with the same services but related to trademarks (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2020e).

CNIPA and China Trademark Office also provide databases of agents, lawyers and law firms. These are necessary because, as a foreigner, it is mandatory to go through an agent or a lawyer to communicate with these Chinese national institutions. It is possible to avoid using them by applying with international tools or for copyrights for which the application procedure is relatively simple. If there is any problem, a need to appeal a decision for example, an agent or a lawyer is mandatory to act as an intermediary. These databases allow to check the status of an

intermediary to verify if he is part of the list approved by the CNIPA. Once the agent has been verified, it is possible to cross-reference the information with the National Enterprise Credit Information Publicity System to verify credentials and access further information. It is very important to choose an agent who is specialised in intellectual property. Many agents are not, but they still offer some IP-related services, especially those related to trademarks since anyone can become a trademark agent without having to pass any certification. However, there is a certification for patent agents. It is also important to consider the location of the agency and to choose it according to where the company's activities are or would be carried out in China (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2021b).

Support is not limited to databases. There are also physical facilities that help companies to enforce their rights once they have been obtained from the relevant institutions. The Chinese government has made it mandatory to have IPR complaint centres at all trade fairs lasting more than three days. This centre, usually composed of a delegation from the local IP office, is available to exhibitors and visitors to resolve IP-related issues. It can mediate between different parties, can have infringing products removed or even seized and transfer the goods to the legal authorities in the case of administrative proceedings. Having a centre available does not mean that it is easy to stop an offence that might take place at the trade fair. This requires a strategy that is prepared in advance and there are two main strategies: enforcing at the fair or enforcing after the fair. What they both have in common is that if evidence is to be collected, it must be done in the presence of a notary public so that it cannot be contested during legal proceedings. The first strategy is to enforce the law when the fair occurs to directly stop the infringer's actions. This involves gathering all the proofs of ownership of rights translated into Chinese if they are not already done and bringing it to the IP complaint centre in several copies, as well as any other relevant information showing that the infringer is indeed violating the rights of the owner. Enforcing one's rights at a trade fair allows the infringer to know that the owner is aware of the infringement. The infringer could then use this information to react accordingly by ceasing its activities, changing its name, setting up elsewhere or taking any other decision that prevents it from ceasing to operate. It is therefore sometimes more useful to use another strategy which consists in using the trade fair as a showcase for a more substantial network and to consider the exhibitor as a link in a chain which must be traced to solve the problem at its root. The aim is then to investigate and trace the network, which may also include suppliers and wholesalers, and to see, by tracing back, who is behind a counterfeit and what is the best way to make them stop the illegal part of their activities. It is then possible to make a case in which several actors are involved and avoids having to take several legal actions for the same case. In order to do this, it is best to be positioned as a potential customer of the infringer and, together with the notary, collect evidence that may be useful later in legal proceedings (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2020d, 2020a).

Chinese customs are also very helpful. They check not only the goods that enter the Chinese market but also, unlike in Europe, those that leave it. It is therefore possible to use them to intercept counterfeit goods. However, this has to be done proactively. Customs need to be aware of goods that are potentially counterfeit and they are not really going to be proactive in looking for them. It is therefore necessary to register intellectual property with Chinese customs. Registering patents, trademarks and copyrights can be done online for free. It allows any goods identified as suspect to be automatically stopped. Counterfeiters will be less likely to export

counterfeit goods as there are administrative penalties if they are caught and there is constant monitoring. This generally works better with trademarks as they are more easily separable than technical specifications. If a patent is registered, it is very important to provide a universally understandable description of it. If goods are seized, the suspected infringer will have to provide a declaration on the status of the goods in question. If this is not provided, the right holder will then be informed and will have 3 days to respond and provide a deposit of up to around €15,000 to customs depending on the value of the suspected counterfeit goods. If an intellectual property right is not registered, it is still possible to alert Chinese customs to the existence of counterfeit goods in a particular container. It is necessary to contact them, provide proof of the rights and concrete evidence that the goods are counterfeit. A guarantee has to be paid to customs equivalent to the amount of the future seizure. This will be returned but part of it will be deducted to pay for storage costs. The owner of the rights has 20 days to start legal action after the customs seizure notification, otherwise the goods will be released (European Commission & Executive Agency for Small and Medium-sized Enterprises, 2020c, 2021g).

#### 1.11.2. In Belgium / Europe

The European Union offers a multitude of support taking the form of direct help or indirect through non-profit organisations officially recognised both by China and the EU. They aim at promoting European companies in China, stimulating their development, bringing Europeans and Chinese together to facilitate trade, or giving advice on how best to set up in China. Most of them are non-profit organisations but are officially recognised by China and the European Union.

- China IP SME Helpdesk aims to help small and medium-sized enterprises to deal in the best way with IP issues that are directly or indirectly related to China by providing free tools and documents as well as experts to answer more specific questions (European Commission, 2021).
- The Enterprise Europe Network provides business with advice, support and opportunities for international partnerships at local level. It is also officially part of the European Commission as well as the IP helpdesk (European Commission, 2015).
- The EU SME Centre aims to prepare small and medium-sized enterprises to help them with their business development, law, standards and conformity and human resources (EU SME Centre, 2015).
- The European Union Chamber of Commerce in China seeks to promote European businesses in China and to defend their interests in the country. It aims to improve market conditions for European companies and facilitate their access to the Chinese market. It also provides companies with information on China, both legal and economic, so that they can operate more easily in the country (European Chamber, 2015).
- The EU-China Business Association brings together the activities of some other institutions. It provides companies with additional information on China, promotes access to the Chinese market and brings together different companies to develop business opportunities (EUCBA, 2014).

Belgium is not to be outdone and offers the same type of assistance through comparable organisations but on a national scale dealing directly with China. China-Benelux Chamber of Commerce in China, Belgian-Chinese Economic and Commercial Council (BCECC) and the Flanders-China Chamber of Commerce all aim to improve market access, collaboration with Chinese companies and networking in order to bring new opportunities and knowledge about China, and its way of doing business (Belgian Chambers, 2020; Belgian-Chinese Chamber of Commerce, 2017; Flanders-China Chamber of Commerce, 2021a). Belgium also has business support centres for intellectual property. These are called "patent cells". They can offer free personalised advice tailored to companies on all IP-related issues and information at any time on the internet (FPS Economy of Belgium, 2021).

#### 1.12. Future outlooks

There are clear indications that China is increasingly focused on raising the quality of its IP system so that the country becomes an IPR powerhouse by 2035. In order to achieve this, the country is proceeding in stages. At the end of the 14th Five-Year Plan approved by the National People's Congress, in 2025, Chinese officials want to open Chinese market up while considering environment and technological progress as key priorities. They also want to look abroad to strengthen international cooperation in case of IP issues abroad, and for the system of partner countries to eventually meet China's expectations in terms of quality and mutual support to boost international trade. The country wants to link up more and is pushing its IP organisations to do the same (European Chamber, 2021; Xinhua, 2022b). More than a pivot to the international level, the country also wants to become a hub for the protection of intellectual property. Indeed, the country wants to have nearly one million professionals working in intellectual property by 2025. According to Feng Zhaolong, from the CNIPA's personnel department: "Talent is the most basic and key element for building a strong IP power." The country is developing IP specialisations within its universities, as well as awareness-raising starting from primary school (Cao, 2022).

China is also increasingly signing up to international agreements, such as the Hague System entered into force in China in May 2022 (WIPO, 2022). This should help Chinese enterprises to better integrate into the international industrial design system and thus develop and promote industrial design innovation internationally. The Hague System simplifies and reduces costs by allowing rights to be applied for in several countries simultaneously in one language and by paying in one currency. This also serves foreign companies who can more easily obtain rights in China through this procedure (Yang, 2022). Joining more and more international organisations also allows China to promote its national currency, the Renminbi, as an international currency that can be used for intellectual property matters; in particular, for procedures related to the Patent Cooperation Treaty. China is becoming increasingly involved in all organisations, as the example of the International Union for the Protection of New Varieties of Plants shows, with Chinese being used as a working language (Xinhua, 2021).

At the same time, China will continue to develop the innovation of its enterprises by increasing the incentives for innovation (Xinhua, 2022c). However, it is unlikely that this will be done with subsidies directly linked to the patent system, as is currently the case, as, according to the Chinese government, this system should disappear by 2025. This should help to accentuate the

shift from quantity to quality intellectual property. Incentives for innovation should therefore be oriented in this direction (Xinhua, 2022b).

## Part 2: How does it practically work?

This second part is based on the results of the interviews conducted with the sample of 14 companies. Given their confidentiality, no source will be cited, except in cases where the interviews did not provide sufficient information and where this information was available in the literature.

### 2.1. How and why access the Chinese market?

China is, and remains, an important source of opportunities for most companies; mainly due to its size. However, these opportunities are reducing as a result of unprecedented economic and technological development, which has resulted in the emergence of new Chinese competitors at a rapid pace in the most profitable sectors. Until the 2010s years, the country and its economic structure were still under organisational development and not very competitive with western industries on high added-value goods. China was focusing on low-added value manufacturing, supplying the world. This development gap has been rapidly closed and is even exceeded in certain industries, especially those linked to new technologies, while maintaining a cost advantage compared to the West. In order to pursue this development, China is slowly divesting from the industries that helped it to access the position it is in now. The country has more fierce competition in the low added-value markets as it mainly depends on the cost of raw materials and on the cost of the wages, regardless of the skills of the workforce. Due to the increase of the salary of Chinese people accompanying the development of living standards, other countries offering lower wages to their people are therefore becoming more competitive. Companies from all over the world sourcing from China for basic products are increasingly shifting towards countries such as Bangladesh that raised the prices less than China over the last years. As China gets increasingly more talented people, mainly through its educational system providing exchanges with many foreign universities, it emerges as a serious competitor to the western world. Both on Chinese domestic and international markets, foreign companies have to deal with new competition on fields that were not previously technologically attainable for the Chinese.

Belgian companies face many challenges in China, both in terms of market access and competitiveness. Indeed, market access can be complex in some industries identified as strategic by the Chinese government. Legal barriers to entry are therefore important and it is often necessary to find a Chinese partner or even create a joint venture with one of them to sell one's goods and/or services. This is not without risk in terms of intellectual property and technology transfer. Western companies generally provide the know-how, while Chinese partners take care of production and marketing on the local market. It can lead to a learning process of the Chinese partner which might eventually start new activities up, capitalising on what has been learned from the foreign company. This practice has been in place for a long time. Protectionism in China has helped the country to foster, grow and mature through its companies and to be competitive not only in the domestic market, but also in the global business environment. Even if the country has already learned a lot through the years and is competitive on many technologies, its companies and people do not know it all. They do still suffer from quality issues compared to Western competitors and, even if they seem ahead in terms of new

technologies, there are many innovations they do not master. China is not an impenetrable massive market and still needs the rest of the world to further develop. Its competitiveness depends on the quality required in a certain industry as well as the level of innovation; especially in niche markets where it may be challenging to operate as a large corporation. Companies from Belgium, or from anywhere else in the world, still have a role to play. However, this can only happen if their innovations are such that they are difficult to be copied or do not represent their competitive advantage and if they are not affected by legal entry barriers. It could be that if any product is generic, non-innovative, easy to copy or already in place without substantial improvement, operations on the Chinese markets and on others controlled by Chinese companies, might turn out to be very difficult.

In addition to protective legal barriers established through negative lists by the Chinese government (cf. 1.3.1), there are also cultural ones. According to the interviewed companies, it seems that in most sectors, cultural differences are predominant and do affect business operations. It especially occurs in businesses that are directly in contact with the regular consumers. Chinese people mainly want to buy goods or services from Chinese companies as they are designed by someone who, as a Chinese person part of a Chinese company, does perfectly understand the needs and the way of using products of Chinese customers. Business to business sectors are not exempted if it implies to provide services or products that companies' employees will directly work with such as user interfaces. Even other businesses are not spared from culture and customs. However, some foreign products that are really representative of exporting countries seem to work very well, mainly in the food and beverage industry. It might prove convenient to at least study the basics and understand how to behave in China and with Chinese people to conduct appropriate negotiations leading to new opportunities and/or contracts. Chinese culture is very large and quite different from what most Europeans might expect both on the personal and on the business levels. These cultural barriers are also found in the willingness to work with Chinese companies or Chinese people. Language is one of the main factors. English is the international business language but many Chinese nationals are not able to express themselves sufficiently in this language, often due to lack of learning and/or practice; this is especially the case for older generations. Younger Chinese people are often better at speaking English than their elders; particularly millennials. It is therefore easier for an older Chinese to speak in Chinese with another local rather than talking in English to anyone else. On the other hand, very few people in the West do speak Chinese. The country tries to remedy the problem with its culture spreading strategy through Confucius Institutes (cf. section 1.4) to become the world leader by 2049 while adapting to English at the same time to ensure international business activities.

Even if there are barriers targeting the economy, each sector has its own specificity and is more or less regulated and adapted to the global market. Belgian companies which are active in China can have some activities over there or compete against Chinese ones either because of their large scale relative to the standardised international niche markets they operate in or because of their dominant position as international corporations. Such major players are rather rare in proportion to the Belgian economy, which is mainly composed of small and medium enterprises (SMEs). The vast majority of them are not Belgian but foreign companies having subsidiaries in the country. The niche markets in which most SMEs are active have a limited development potential. Companies therefore need to act on the international stage as national markets are

often too small to cushion the required investments. These are not multi-domestic markets as it can be expected that Chinese companies will better fit local customers' expectations. Large international corporations do benefit from their economic weight and substantial financial capacities to start or pursue operations in China. They use their experience on the global market to compete in the Chinese market.

Belgians and Europeans seem to better perform against Chinese competitors when the international markets require high quality products and strong brand reputation. Indeed, China still lacks behind Europe in terms of quality and is being assigned with a worse brand image, even if it can offer its goods for less than Western companies. If price is the main criteria with high volumes required, there is a high probability that a Chinese competitor will be the one winning the deal; except if it requires almost only low skilled workforce as other countries in Asia or Africa might prove more cost-effective. On the contrary, Chinese companies may not be able to make it in high-quality demanding international markets that favour renowned companies as their global competitors would produce a higher quality product, even if more expensive. Nevertheless, any new competitor, even a Chinese one, would have low interest in setting up in a mature international market mastered by companies from all over the world for decades as, unless the newcomer disrupts this market, established companies will be able to use their accumulated experience over the years to propose a better product for a lower price than the new entrant. It would then be very difficult for this new competitor to become profitable in such mature markets. The companies operating in these markets are therefore relatively safe from any new and really threatening competition that would use a similar business approach. Conversely, it seems very difficult to penetrate a very profitable market aligned with the Chinese government's development strategy with standards similar to European ones. Belgian or European companies seem to not effectively compete with their already well-established and subsidised Asian counterparts as their technological development rate and the relative low cost of Chinese labour are making them more competitive. Other interviewed companies can compete thanks to their size and their understanding of the Chinese market. They operate in China according to the Chinese rules and legislations; thinking as a Chinese while being managed from headquarters in a Western country.

Although the innovation-driven growth and development of the country seems to be reducing the number of market opportunities for foreign companies, there is still some existing in certain niches and others are being created as China opens up. These even occur in strategic sectors because, although the Chinese Communist Party is in charge, the country is more and more evolving towards a market economy even if it is still oriented and subsidised. The companies that will be able to exploit them will be those that have reached a critical mass and those with a solid reputation whether they are operating in a standardised market or a multi-domestic one. They need to have a very well defined and adaptive strategy for China to catch the different opportunities that this market could offer. As China is getting more open, large multinationals should also benefit from having operations over there or, at least, get easier market access in the future. These firms, small or large, will be able to take advantage from partnerships with new Chinese players who wish to expand into global markets after having conquered their local one. Other companies that may also benefit from opportunities will be those that follow the trend of the Chinese population becoming richer or that act in accordance to the Communist Party's five-year development programmes to help them achieve their ambitions. As Chinese



people's purchasing power parity (PPP) increases, it leads to more consumption of products and services. Chinese growing middleclass is an opportunity for all companies to access more potential customers. Even if the Chinese firms are favoured, market share will inevitably be captured by foreign companies. Developing operations in line with the expectations of the Chinese officials might also bring value if the company is able to deal with the national authorities. There is no doubt that China will first and foremost favour its own companies before turning to a foreign one. If a public contract is obtained, it will probably be on terms that will not be very advantageous, such as a forced technology transfer or special conditions. In a few years, the competition will probably have learned all of what the foreigner has brought and its establishment in China would lose its meaning. This can sometimes also be to the detriment of the companies' local market in the very long term. International competition would have learned what makes the competitive advantage. It could also impact the independent decision space of institutions and politicians within the international context of the company's country in some strategic areas.

Doing business in China remains a recommended choice when legal and market conditions are favourable. Not being involved in establishing business operations in China represents the risk of missing out on market opportunities, therefore potentially important future revenues and development potential. It is also a likely loss of influence on the domestic market of the Belgian or European company in the long term through the emergence of new players occupying an important international place within a standardised market. China should however not be the very first country with the largest operations of a company as it would bring too much dependence on a system that is fluctuating a lot. Any foreign firm should start its business operations and grow it to a certain level in their own market and, then, in very transparent international markets where the employees do understand culture and have easy communications, with the implicit condition that there are business opportunities available to the company. To this regard, China would only represent a part of the revenues. Already being an actor on the international scene could help facing challenges in China such as setting activities up by finding business partners, having the appropriate network or hiring a trustworthy team to deal with everything related to this country. It might also be relevant to already have reached a critical mass by previously being established in other markets in order to absorb the liability of foreignness, potential fierce competition or disputes. In the past, it may have been difficult to access the Chinese market without jeopardising the protection of one's intellectual property. Today, the system is evolving rapidly, market access is getting easier and IP protection in China is stronger than ever, although still perfectible, but this has been accompanied by the emergence of globally competitive giants in many important industries.

## 2.2. Protecting inventions or not?

Whether or not it is necessary to patent or use other means to protect intellectual property in China is a decision to be made by each company. The approach considered is rather the same as for other countries. Most companies target the manufacturing and headquarters locations of their competitors, the markets in which the product is sold, the markets in which competitors sell and the markets in which suppliers are located. Subsequently, they select the key markets for patent protection, which must of course make economic sense.

As with other locations, the first question to be asked by a company is not the one of return on investment. It can be defined as additional sales generated by the patent, or non-loss avoided. It is essential to firstly ask oneself whether patenting or, more generally, defending one's intellectual property corresponds to the company's strategy; whether in China or in any other country. Indeed, strategy alignment takes priority over short-term profitability of the protected product or brand. Patenting takes time: three to five years, sometimes even more. It is therefore impossible to seek patent protection with a short-term view. Other IP means giving protection such as utility models could meet short-term strategies (cf. sections 2 and 3.2.5).

Belgian companies do protect their products or/and services innovations with patents for different reasons. Most of them revolve around profitability and market access. There are as many reasons as there are strategies, all implying those two components. There are three main combinations emerging out of the interviewed companies' sample: focusing on market access, profitability and a combination of both.

### 2.2.1. Market access only

Companies focusing on market access usually do not have any activity in the targeted country but would like to or are open to the possibility to start business operations in there. This might not be truly cost-effective or profitable in the short term but it is a necessity if there are real ambitions to enter new markets with key innovations that need to be protected. It is very important to already know, when releasing a product or seeking for protection in the home country, if and in which other places protection has to be requested; otherwise, it may turn out to be impossible to protect an already released product due to the lack of fulfilment of the novelty criteria (cf. 1.9). If there is no real plan to establish in another country, it might still be worth seeking patent protection. The aim would be to prevent competitors in this specific place from copying the product or service. Especially in the case of large markets, as China is. A company out of a country where no patent protection was obtained could use the unprotected innovation to grow and reach a critical size, within its own market, that could make it compete with the innovator in the future. This risk is even more likely in standardised markets as everyone offers a solution to a problem that can be solved in the same way all over the world, with similar characteristics and therefore a tendency for companies to go global. However, if the company evolves within a multidomestic market and does not plan to start up operations in the targeted country, it might not be worth investing in patents over there. In this kind of markets, protection would not really be beneficial to the company if the innovation is specific to some markets. It is unlikely that a foreign competitor will use this innovation as it does not apply to its own business situation. It may therefore not be worth protecting itself in there for the sake of profitability as it avoids IP costs, including expensive translations and annuities. If a company is protecting its rights in another country with the aim to retain access to the technology being developed, there is probably no need for on-site monitoring. An in-depth audit will be necessary to be able to gauge the market and at the same time provide data on the ideal timing for the product introduction.

Protecting oneself in a country without monitoring the market opens the door to illegal use of innovation by local players leading to an increase in their competitiveness because they will not have had to spend time and money on research and development. Indeed, a competitor or

competitors may rely on a protected but unmonitored technology in order to develop their own activities as the patent owner has not developed any means to detect infringements. If this proves to be the case and no action is taken by the rights holder in a timely manner, there is a strong possibility that local competitors, potentially from multiple sectors, will use the technology without authorisation. A complex and costly legal process against several players with often unpredictable outcome would then need to be pursued to get this corrected. In this scenario, not paying attention to a market in which one has something protected is like having a weapon but not knowing against whom or when to use it; making it ineffective. If there are no plans to set up a business operation in China or in any other country and if the company has no real interest or desire to prevent competitors from appropriating a technology, then it may be better not to consider that country as a priority.

### 2.2.2. Focusing on profitability

#### 2.2.2.1. Marketing reasons

Some companies seek for profitability without paying attention to their market access. They try to be profitable by using patents as marketing tools, or to provide licences, sell or resell patents to companies in other countries. Companies willing to use their patents for marketing's sake are often applying in countries where they are extremely easy to be granted as almost no verification is made. They do not patent for a specific market access or even to compete but rather prefer to use the granted ones as a sales tool to convert more leads into customers and therefore increase their revenues. These companies are willing to maximise the profitability of their actions and will therefore not have a real IP strategy. They are patenting whatever they can, even if the intrinsic value of these is very low. To cut costs, they do not monitor the usage of their technology in other markets. This case of patenting for marketing purpose is very rare because companies usually balance costs and profit with market access as the greatest profitability can only come from a strong market position combined with a strong competitive advantage. If a company does apply for patent, it will definitely use it for marketing but it is not the primary goal.

#### 2.2.2.2. Patent trolls

Firms that use intellectual property as their main business without offering any tangible product or service are often called "patent trolls". They often do not pursue innovation processes and they do not base their business model on the trading and licensing of intellectual property rights acquired but mostly on their enforcements. They generally wait until a company has made substantial investments before initiating threats and then take legal actions if necessary, so that the infringer has no choice but to succumb to the threats. They often do not have a good reputation within traditional highly innovative companies because their business is based primarily on prosecutions, not for the purpose of retaining the monopoly that a patent grants but to maximise damages. For this reason, they are generally detrimental to traditional businesses and are sometimes even described as welfare-destroying (Pénin, 2010).

These acquired patents are sometimes of poor quality and in some cases, should probably not exist. It is therefore possible to challenge the validity of the patent but this involves starting potentially long and costly legal proceedings. Other patent trolls choose to invest in quality patents to ensure that the technology is of high interest. However, they all usually invest in patents with a broad scope that would allow them to start legal proceedings against a potentially large number of infringing companies (Pénin, 2010). Patents are usually purchased in company liquidations or from firms that no longer perceive the value of the concerned rights.

Patent trolls are not only negative. By their very existence and activity, they put pressure on all other companies. No one should be allowed to use the technology of others without their consent; whether it has been developed or purchased. Since patent trolls specialise in legal issues, it is relatively easy for them to take legal action and maximise their profit. This type of company therefore makes it possible to push others to innovate so that they use their own innovations and not those already on the market. It is important to keep in mind that their primary goal is profit, not technology. Although they may have some benefit in encouraging companies to innovate, this is not their primary goal at all (Pénin, 2010).

### 2.2.3. Maximising profitability and market exclusivity

Most companies apply for patents to ensure exclusivity in highly competitive foreign markets as well as to maximise their return on investment during the time of the monopoly. However, maximisation of both profit and market exclusivity are only theoretically possible. In reality, it is not possible to define an ideal. It is specific to each company, to its strategy and to each market. In order to reflect reality, it is more appropriate to state that IP matters are not about profitability but about the level of risk relative to the cost of protecting oneself. Almost no company thinks of profit regarding IP protection when the management is not aware of it and considers it as a cost; but it has a real value that should not be underestimated.

The value of intellectual property rights (IPRs) can take the form of market exclusivity and opportunities as well as freedom-to-operate (FTO). Furthermore, it is possible for a company to go beyond valuation by bringing liquidities in. This can happen through licences, sales or even by using the valuation of the rights as the collateral for loans. Many companies, however, are not willing to license for strategic reasons while almost none is willing to sell what builds its competitive advantage. The same proportions of companies use their rights for loans as it might be difficult to exactly determine their worth or because they are not aware of this possibility. Even if intellectual property seems to cost money, it makes more sense to identify it as an investment. As well as potentially making money and adding value to a business, it can also reduce costs through tax reductions and benefits.

Market exclusivity is no longer really an issue and is basically guaranteed if the application processes are properly done and if the innovations are not under legal or administrative restrictions in the targeted country. However, just because a patent has been granted in a country does not mean that one has what it takes to develop there. It is necessary to set up the exploitation of this patent in the best possible way in order to maximise its return on investment. To do this, it is important to ensure that the exclusivity granted by the patent is respected, which involves costs reducing the return on investment.

Although invoked as a defensive weapon by many companies, patents are not infallible for two main reasons. The first is that a granted patent has a limited duration (albeit substantial – up to 20 years). In the long run, an invention is destined to become part of the public domain, hence no longer for exclusive use by the patent applicant. The maintenance becomes more and more expensive as time goes by; even if costs might not be the main decision driver as it shall be afforded by the revenues it generates. Secondly, it is possible that in a competing company, a thorough analysis of the filed patent is made and the competitor uses the patent to develop its technology but modifies some parts of it or works-around in order to avoid the protection scope of the first company's technology. A competitor can learn from a patent to develop itself just as much as it is possible for a company to patent in order to block a competitor. Most companies are reluctant to pursue an innovation process with the only purpose to directly block their competitors because this could have a direct effect on them once their competitors do the same with them and it is quite unlikely cost-effective. However, it is always worthwhile to find out what competitors are doing to assess their technological development by checking their patent applications. In the case of the detection of a future breakthrough technology that would revolutionise the entire market, it should give enough information to negotiate with this potential partner or to find an equally interesting alternative in order not to be left behind.

#### 2.2.4. Patent strategy

Freedom-to-operate (FTO) is one of the main objectives to achieve in the area of intellectual property. Ideally, one should be able to exploit its product, make it and improve it in the way one wants without infringing the rights of another entity. Sometimes rights are infringed inadvertently, but infringement can more often happen when the right previously obtained by a competitor, or any other entity, is specifically directed to slow down the targeted company and its product launch timing. Even if, theoretically, patenting in that way slows down the innovation process, it stimulates the need to work around from competition, so innovation. Practically, it slows down the development pace of the target and forces it to modify this process to reach a new final solution that will take longer to develop. This delay allows the company initiating the blocking to make more progress on its innovation process or to introduce its product to the market before its competitors. This notion of freedom to operate is crucial for all companies. It is therefore probably not in their interest to anticipate a competitor's innovation on pain of retaliation in the future. The practice would therefore be to concentrate on protecting one's own development, what has been developed as a result of one's own innovation process, and not to invest solely in order to prevent a competitor from doing its business. However, one should remain realistic especially in the development of a new product. If the first entrant into a market will become its leader, there is probably a strong incentive to try to block a competitor using a similar technology. It can be done by adapting the wording of a patent somewhat to fit not only what the company is using but also what the competitor might use as an alternative.

The fear of freedom-to-operate (FTO) by competitors is not to be confused with enforcement proceedings and patent invalidation proceedings against or by competitors. While enforcement proceedings allow a rights holder to enforce them and prevent another company from illegally using them, invalidation is the process of standing against a decision that granted a patent to an entity which, in the opinion of the invalidator, should not be granted such rights. There is

therefore very little correlation between freedom-to-operate (FTO) and such legal proceedings as the first concerns business strategy and the others are purely legal even if they foster it. Even if the correlation is weak, it is possible to identify a link between business strategy and invalidation actions. These can be used by companies having identified a third-party patent which would be infringed by their activities. They may therefore decide to start invalidation actions to clear the way. Patenting also means disclosing part of one's know-how and, *a fortiori* exposing it. As a result, several strategies are used by companies, grouped into two broad categories making two ends of a spectrum with many variations in between: patenting as much as possible on the one hand and the protection of the strict minimum on the other.

The strategy of patenting as much as possible allows the large number of patents to be used for marketing purposes as it may show customers that the company is very innovative. It also expands the scope for development in its own or other markets as some innovations of a company could also be valid in other sectors. These patented inventions can potentially open up unsuspected applications of a technology. For example, a company decides to patent its new inventions which apply to its products. As the number of patents increase, there is a higher probability that one of them serves unintentionally as a gateway to a new product in the same market or to a whole new market for this company. The more patents there are, the more likely there will be patents that are also valuable in different sectors. If the company does not master and has no intention to invest in any of these very different industries, licensing might be a wise decision. A large number of patents also ensures that most of the components of a machine are protected but in a separate way. Doing so prevents a competitor from clearly identifying what makes a product outperforming the competition. It also makes it more difficult to recreate the product based on patents. Since a patent is like a recipe, it is more complicated to put it together in the right order when it is split up. Moreover, thanks to patent writing techniques that broaden the actual use of an innovation, it is possible to divert the attention of competitors who would analyse the patents. Recreating the same type of machine would prove to be difficult and too expensive. A fierce competitor would have to exactly identify which part is or is not protected and, for all those that are, to find an alternative solution to the one that is probably already one if not the best. The main disadvantages of this mode of operation are that, although the rights obtained are valuable (cf. below), the cost can quickly become excessive, especially for an SME, and patenting everything is almost like giving the pieces of a puzzle that you just have to assemble to obtain a guide to recreate the innovation. It actually becomes very expensive to have a large number of patents and to pay for all of them, especially when the annual fees increase as time goes by. Patenting everything also increases the risk of copying as the detailed description in the patent does explain the way the invention works into details. This would also be costly to deal with, either in legal fees to stop infringement or in losses due to the emergence of competitors. A legal stalemate is more than likely and, in the case of China, damages are not enough to pay for all the costs and time involved.

The other side of the spectrum strategy consists of patenting only what is critical to the proper functioning and exactly what is aligned with the strategy while keeping almost everything secret to the point that there are almost no patents. It is rather minimalist in terms of patents and focuses on obtaining rights only to those technologies that are critical to business operation. The goal is to keep as many of the "pieces of the puzzle" secret, mainly parts that are not visible and are difficult to discover with reverse engineering. It often occurs when the innovation

implies material characteristics that are difficult to identify. The main advantage of this strategy is the small cost formally speaking compared to the other. Indeed, the small number of patents makes it possible to save on annuities but also on the various costs associated with obtaining such rights. It is therefore particularly advantageous for small companies that do not have a large IP budget, do not yet have a clear patent strategy or do not yet know what the future will hold for them. However, it is quite complex to do everything possible to keep all critical information confidential; no one is safe from leaks, espionage or hacking. It is probably easier to keep tight of leaks in the case of an SME, especially when it comes to monitoring employees and detecting espionage. This would seem to be much more complicated to achieve in a large company with thousands of workers and different business units. On the contrary, a large company has more resources to protect itself from hacking. It usually has an IT entity that is able to react and assist anyone within the company, what is not possible for an SME. The main challenge for firms opting for patent minimisation is that it is not possible to take legal action if a business secret is revealed, unless certain conditions of protection are met. Since it is not legally protected, it is very complicated to contain the IP issue once the breach has been made.

It seems that the best strategy is a hybrid combination between minimalism and filing patent applications for any technology or improvement. As each industry has its own specificities and each company has its own strategy, it is complicated to define a global optimum. However, it is fairly safe to say that the extremes are not ideal, between high risk on the one hand and economic non-optimisation on the other. In either case, however, it is not advisable to patent processes. Processes are generally at the heart of the competitive advantage of companies and are used in the long term, sometimes for longer than the patent validity length of twenty years. They are therefore considered as highly strategic. A patent for an invention or technique can be seen as a piece of a puzzle. Patenting a process means giving the instructions for use of what makes the company's competitive advantage. In the long run, making these processes available to everyone implies a possible threat to the competitive advantage of the company. A patent on an invention is not sufficient to determine a competitive advantage as only what the company does of the patent rights takes place in a part of it. Patenting a process inevitably leads to the competitive advantage erasure. Even if the company has built up an advantage by gaining market share with its patented processes, once the protection period ends, the same ones may be used by any competitor re-using or improving them over the very long term.

#### 2.2.5. Seeking faster protection

A patent does not offer absolute or immediate protection. It should be considered as a start-up aid for a product that must be continuously improved to stay ahead of competitors. Moreover, it takes a certain amount of time, generally 3 to 4 years, to receive a grant for a patent application, whether internationally or in China. In order to obtain faster protection, more and more companies in certain industries are applying for a utility model at the same time as a patent application. They are only available in some countries. Although they offer less protection, are easier to invalidate and have a narrower scope than patents, utility models are much quicker and cheaper to obtain. They can therefore help a company to introduce a product to a market while being protected in just a few months rather than having to wait for several years. The companies using this system are usually the larger ones, or at least those that have an internal

IP organisation and/or an IP strategy strongly linked with the business strategy. Management awareness of the importance of IP and of the different tools that exist in order to best time the launch of a new product or innovation is crucial.

Most large international groups interviewed do not seem to make much use of utility models as it is more difficult for them to react very quickly, because they operate in highly regulated sectors or because utility models do not suit the needs related to their product's lifecycle. Companies exploiting products with a shorter lifetime such as high technology for consumers will be more inclined to seek for faster protection thanks to utility model. In addition, because of their size, big multinational companies suffer from inertia which is often the cause of a lack of agility which prevents them from reacting quickly to new small market conditions necessitating the use of utility models combined with patents. This is mainly the case in companies organised in highly hierarchical structures that require a lot of internal formalities and therefore have a long reaction time. These companies prefer to directly invest in patents over the long term rather than introducing a product very quickly with the help of utility models. Moreover, these new market conditions are usually not significant enough for the company to embrace them. They generally represent amounts that are interesting for SMEs but not for international groups. On the other hand, the utility model is very little used by the smaller companies because most of them do not have significant business operations in countries proposing them such as China. They generally only own a few patents in there, hoping to develop their activities, to produce or to keep access to their technology. Small companies usually focus on their own domestic market with the tools provided in their location rather than on others. The companies most likely to use utility models are of medium size. They are generally quite internally reactive and small changes in market conditions remain attractive to them.

All of this is a generalisation of the different cases observed during the survey. There are exceptions, either at the level of the companies themselves or according to market conditions. Indeed, if a new market turns out to be a long-term opportunity that needs to be quickly captured to build a strong competitive advantage, a large company should be able to react almost as quickly as a small or medium-sized one; especially if it is a winner-takes-all opportunity. In the same way, every company is different. A large firm may have a policy of using a lot of utility models, or its decision-making process may be either very fast or decentralised to the different business units to increase responsiveness to the market. SMEs may also have a longer decision-making process if it turns out that they must choose between different opportunities due to lack of funds, if they are not sure of the alignment of the opportunity with their strategy or due to potential lack of responsiveness or competence of IP consultancy firms.

#### 2.2.6. Divesting patents

For any company but especially for those with many patents, it is important to know how to divest the ones that are no longer profitable. Patent relinquishment is common and is usually done under conditions that no longer allow the company to gain any financial or strategic advantage in either the short or long term. In the largest firms, it seems that the short- and medium-term vision predominates over the long one as they have an obligation of result towards their shareholders who generally see the short-term fluctuation. These companies risk not having their costs optimised by patenting too much or paying less attention to patents that



do not produce the best return. Even if it is not optimal, they usually have the financial capacity to afford it as well as showing shareholders that their company is innovative as it has patents. It leaves a risk to the maintenance of so-called “zombie” patents, or patents that do not make enough financial return and do not improve the company’s strategic advantage compared to its competition. Although they are usually quickly eliminated, zombie patents are a source of costs that need to be addressed as they have become useless with time. On the other hand, small and medium-sized companies generally do not have enough resources available to maintain patents that do not offer a return on investment. The case also arises when to consider whether or not to patent an idea. SMEs very often think long and hard before making the decision to patent because of the significant costs involved. This desire to minimise the short-term expenses of their intellectual property is sometimes a source of future problems due to changed market conditions, or the company having a narrow vision on the development of its product without considering other related aspects which may prove profitable. This mainly happens in companies where the management is not aware of intellectual property and sees it only as a source of costs if there is no immediate return on investment. This prevents the possibility of having a long-term vision for strategic reasons. Although patents are always useful and profitable for each interviewed company, the more one patents, the more it needs to be able to exploit the granted rights. Indeed, the more patents there are, the more difficult it may be to exploit their full potential. There is therefore an optimum, specific to each company and each sector, to be found between the number of patents and the company's capacity to exploit them.

### 2.3. Producing in China

The question of production in China seems to arise only for medium and large companies and for all those with a (partly) physical product of which at least a part is low-tech and to be produced in large volumes. All the companies concerned use suppliers, but some have also set up joint ventures with a Chinese counterpart, either for production or to gain easier access to the market because of cultural or legal barriers (cf. 1.3).

The reasons for producing in China are manifold but change over time. A few years ago, China's competitiveness was mainly based on the low cost and abundance of labour. Today, we are dealing with an increasingly qualified workforce, sometimes surpassing the European one, but always at a knowledge/price ratio that defies all competition. For lower value-added products, companies are starting to move away from China to countries where labour has remained cheaper. Now, China has highly technological production capabilities, but quality standards seem to remain lower according to the respondents. All parts requiring high-quality manufacturing are therefore kept in the West, while others are predominantly produced in Asia.

China has more to offer to foreign companies than just labor and low cost, assuming that quality objectives can be met. There are many factors that determine whether it is better to produce locally or to relocate production activities to China whether through a supplier, a joint-venture or a subsidiary. We will focus on two aspects: costs and the risk to intellectual property rights to be infringed. As seen above, costs in China are rising, especially in terms of labour. Moreover, transportation costs become increasingly expensive. Producing in China or even far-away from deserved markets becomes a very important decision factor as prices go up. At this level, each

sector is once again specific and many variables exist such as the volume of the product, its weight, its lifespan, its value, its fragility, a necessarily short delivery time or not, etc. All these components determine the cost and the interest or not of producing abroad. Concerning intellectual property rights, most companies have acted to seek IP protection in China when they have a subcontractor producing in there, but also when they produce themselves, whether through a subsidiary or a joint venture. As far as suppliers are concerned, it is very important to be able to check their work, to make sure that they not only perform their tasks correctly in relation to the company's expectations, but also that they are not producing more than what is required and selling it on to someone else without permission. The supplier should have no links with any competitor or potential one. This is rather idealistic and it may be difficult to find such a supplier. The practice is much the same for both joint ventures and subsidiaries. For the older joint ventures and subsidiaries, there was and is still a technology transfer from West to East, probably out of habit. Over time, everyone in this partnership is better off otherwise it would have been closed. Nowadays, companies are much more cautious when it comes to joining forces or opening local operations in China, especially in view of the country's competitive capabilities. Intellectual property is being split up, making it impossible to reproduce a product in its entirety. The plan is to divide up the different pieces of the puzzle between different suppliers, ideally keeping the most critical part, the one that makes the product unique, within the company where it can have the most control. This seems to work quite well in all type of markets. Multi-domestic markets are, however, favoured over compared to standardised ones. Indeed, it is enough that the markets are different from one region to another to have production abroad with relative peace of mind. An infringing supplier or partner would encounter difficulties to sell the surplus it produced to other markets if these products do not fulfil the needs or the legal standards of these other places. The opposite is also true. In standardised markets, it is necessary for a company partnering with a Chinese to be extra vigilant, to put controls in place and to manage its intellectual property smartly. Splitting IP up to ensure that the company's own rights and the supplier's obligations are respected is a must.

There does not seem to be a magic recipe for finding a reliable partner. The companies interviewed that have ventured into China, whether for a joint venture, for recruiting local people to set up a subsidiary or for production, have all relied on their professional network and recommendations within it, on the reputation of established Chinese companies or, riskier, on trade fairs or on specialised websites. It is not advisable to rely on trade fairs or specialised websites to find the ideal partner as one will never have a clear view of the other company nor of its real intentions. It is better to favour reputation or the recommendations of somebody else. It is likely that a Chinese company with a strong reputation will also request a partner of the same level. This is more likely to happen between medium and large companies of relatively comparable size. If a small company wants to join forces with a large one to create a joint venture, it is likely that, if the technology of the small company is of great interest to the large company, there will be no balanced joint venture but a de facto takeover of the smaller company (or at least of its IP). This is the case for all companies, regardless of their origin or sector. It seems, however, that it is easier for a Chinese company to buy an European one than the other way around. Mergers and acquisitions files are very controlled in China so that they can remain sovereign of their technology and avoid sending it abroad. According to several interlocutors, Europe and Belgium have no or very few such mechanisms that stimulate protectionism. This is done in order to attract foreign capital.

#### 2.4. Detecting an IPR violation

There is no ready-made plan for detecting IPR infringements. In fact, it seems that very few companies, regardless of their size or sector, have real internal processes for detecting infringements as long as they do not perceive the potential or effective impact it can have on their business. It can be explained by the fact that it does not make a lot of sense for companies to monitor other markets than theirs. While sales teams and product owners are usually aware of what is happening in their own market, they have no means of looking for potential infringement if it does not hurt their business. Most companies seeking to earn money from their IP rights such as licensing companies or patent trolls efficiently monitor many different markets as the others are gaining from the protected products/services they are selling and usually focus on monitoring their core markets. Moreover, they do not usually think it is worth the effort as punitive damages granted by courts are often lower than the worth in money and time invested to collect evidences and the cost of legal proceedings. The main active action undertaken by most companies is the internet search. Searching for similar patents or monitoring the progress of competitors with patent search tools cannot be considered here, as these do not expressly infringe intellectual property rights in the sense that they create a new right for which invalidation proceedings could be initiated. All other means are passive and are based on encountering an event by chance rather than looking for it. Indeed, most companies surveyed simply do not look for it and wait for the event to occur. This includes using the network of suppliers and customers, training staff and getting help from the regulator. Some companies even choose to ignore a possible infringement that arises because they do not feel sufficiently affected in the markets in which they operate. This is rather contradictory to the main idea of protecting one's rights in another country, but if the infringement is too small to take action, it may not be economically viable to start a legal action.

Companies with a limited number of suppliers and/or customers use their small business environment, as it is their partners that infringers often contact. However, this only works in business to business (B2B) sectors or in small local companies that know their customers very well. It is rare that an infringer would be interested in a local customer base, as the risk is probably not worth it. Therefore, for small companies focused on their local market, it becomes very difficult to find a competitor on the international scene which would use the rights illegally. The use of the supplier network and, even more so, the customer network is crucial. Many counterfeits have been reported to companies so that they can take appropriate action. The detection of counterfeits is also done by the people on the frontline and those who know a product or products at their fingertips. That is to say, company staffs who are trained to detect counterfeits and who can pass on the information without delay to the competent person. It is therefore important that employees are properly trained to detect counterfeits. This is what most companies with international expertise are doing.

It is also possible to hire people in other countries, primarily locals, to visit various companies and see if, in that target country where language may be a barrier to detecting counterfeits, all rights are respected. Hiring someone specifically to carry out audits seems to be rather suitable for medium-sized companies. The small ones are not *a priori* willing to audit and the large ones usually have teams on site that are not specifically tasked with auditing but with passive monitoring as mentioned above.

The work of infringement research is facilitated in some highly regulated and controlled sectors. For these, a minimal search must be done because the regulator will directly notify any suspicion of infringement to the rights holder company. The latter will be able to confirm or not the illegal copy and easily block the competitor if the facts are proven. These sectors are exceptions and are those considered to be of primary importance. The best known is the health sector.

## 2.5. Stopping an infringement

Once an infringement of rights has been identified, regardless of the means used to detect it, one can choose to respond or not. Of the companies interviewed, very few have any real experience of actual enforcement of IPR in China. When an infringement is found, it is often from a small competitor which is not a real threat to business of the company. More specifically in the case of China, companies usually firstly focus on sending cease and desist letters through their lawyers. This is often sufficient to stop the infringement, although some companies do not check that the infringement has been stopped because they perceived the threat potential as lower than the cost of flying someone or hiring a local to carry out the checks. Conversely, other companies, again in a small proportion, usually those with the most resources, decide to take legal action, even if it is costly, to show other potential infringers that the company is active in defending its rights and to deter them from infringing. For some respondents, it is not worth taking such extensive legal action because they feel that the Chinese system tends to favour local companies due to language barriers and the complexity of the system, such as the requirement to have notarised evidence to be admissible in court, and the administrative burden. For others, any attack would simply move the problem to another province when it comes to very small entities. For this reason, it seems that with limited resources, cease-and-desist letters can be sufficient considering the level of threat of the infringement. Going after a company that is too small legally would only displace the problem, while going after one that is too large would only lead to a very costly and possibly damaging legal process for all parties, possibly resulting in a stalemate. Chinese companies are aware of this and will also favour discussion. According to some companies, this is since only a small proportion of foreign companies have willingness and the financial capacity to stand up for their rights in court. This applies especially when the language of the country is not mastered within the company, when the legal system is or appears complex, when the country concerned is far away and when the activities are not of major importance to the company.

## 2.6. Relationship with the IP law firm

Companies have the choice of relying on external IP services or of building up in-house expertise and staffing to answer the demand. Outsourcing is most common in SMEs and even in some larger companies. It is sometimes easier to deal with an external service provider because they are specialised and know everything there is to know about their business. On the other hand, if companies have a long-term IP strategy and interest, it will be rewarding to build up sufficient internal IP expertise in any case. However, there are differences in the quality of services provided by different law firms. In order to directly influence them, it is important to represent a relatively consequent client for the IP firm. An IP consultancy company might be tempted to

devote more attention to a large client than to a smaller one. It is therefore more advantageous to use several IP firms so that they can absorb the amount of work rather than centralising everything in one service provider. There is no real attachment to a particular consultancy company but rather to the people composing it. Companies generally follow people in charge of their file if they are happy with them, regardless of the structure by which they are hired. They also do not hesitate to change partners if they are not satisfied. Although quite efficient, specialised firms are generally expensive and, unless a long-term and trusting relationship has been established with the company, the consultant does not hold all the cards as an internal person would in daily contact with the researchers and engineers. To optimise costs, it seems recommended to hire a new employee when the critical and continuous flow of ideas to be protected is reached. However, this can be quite tricky to determine. It seems reasonable to internalise processes when the price/quality ratio of an in-house employee is higher than that of an external specialist for a minimum quantity. It is common that when the critical flow is not reached, a person from the R&D department with some affinity for intellectual property spends some time managing it, sometimes writing patent applications or more often communicating with the external agent. She/he also provides strong inputs to the writing of patent applications, optimising the communication with an external agent who is involved to a limited extent. It seems that this is not the optimal way to operate, as the person in question has to split her/his time between two different jobs and is ultimately neither effective in the R&D department due to a lack of time, nor in the IP department due to a lack of time and experience in this area. It would therefore be better to use an external IP firm until the company manages to generate a sufficiently large flow of IP to justify the recruitment of someone competent in this area or to have someone in the R&D department devoting all of its time to this task.

## Conclusions

The objective of this document is to analyse the strategic stakes of companies with regard to China and their intellectual property. This allows a better understanding of Chinese actions, China's way of thinking and to expose the main lines of a policy, going beyond the economic aspect, which places the country on the highest step of the world powers. It is necessary to put oneself in a geo-economic context to understand the implications for Belgian companies and their competitiveness on the international scene.

Thanks to a literature review, backed by interviews with 3 IP consultancy firms, followed by a qualitative analysis of 14 companies' strategies to protect their intellectual property, it is possible to verify the hypotheses mentioned in the introduction:

### H1: China uses Chinese companies to serve a geopolitical cause beyond them.

It appears that China does not directly use its companies for geopolitical purposes, but it does greatly influence their strategy so that it is compatible with the country's ambitions and expectations. Aligning corporate interests with those of a larger strategic dimension allows both the companies to grow and the government to place its pawns in the way it wants. Chinese companies have an economic interest in following the line dictated by the Chinese Communist Party, especially if it represents strategic infrastructure such as ports owned by COSCO. The opposite is also true: China uses the geopolitical tool to favour its companies. This is particularly true for large construction companies that are building new infrastructure in the Belt and Road Initiative partnering countries. This makes it possible to dispose of surplus production and to grow whole sections of the Chinese economy. Other companies evolving and competing with the bests in the world to become number one in the key strategic sectors identified by the Party may also be granted new opportunities thanks to the weight and influence that China may have in some regions. The Party's hold may, however, be less favourable to some companies that deviate from the Party's guidelines and may pay the consequences. This could happen if the company's influence becomes threatening to the one of the Chinese authorities. Therefore, it is important to stay within the bounds of what the Party decides especially for Chinese companies. This leaves a wide choice of development possibilities. Playing the game according to the Party's rules can lead to normal development and even to development opportunities if it is aligned with the authorities' goals. Going against or beyond these rules brings a certain level of risks to the company and its management.

### H2: China wants to take control of international institutions so that everyone plays by the country's own rules and thus favours Chinese companies internationally.

It is not possible to clearly identify a direct link between China's leadership of international institutions and its increasing involvement in them for promoting its companies abroad. It seems that access to international institutions is aimed at developing China and its sphere of influence or even its economy, but not directly its companies. China's development in international institutions is aimed at defending Chinese interests and moving forward with China's vision in mind. As is often the case with China, this is a long-term strategy that will most likely have a positive effect on Chinese companies, but the goal is not to focus on corporate development.

However, taking a position in these institutions may encourage the development of new standards that Chinese companies may be able to implement more quickly than others thanks to a stronger connection with the authorities and a great capacity for deployment that is sometimes encouraged or even promoted abroad by the authorities.

H3: Foreign companies are disadvantaged in China by the system and cannot compete as well as their Chinese counterparts on this market.

The Chinese intellectual property system has never been better. For sure, rights used to be very difficult to enforce. It is easier to do so now in line with China's turn towards innovation. Despite this development, according to the interviewed companies, the system still favours local players. However, although China is more protectionist than Europe and there are strong restrictions and controls on strategic industries, this thinking is mainly driven by the real cost of litigation in China as well as a lack of knowledge of the rapidly evolving system and its specificities. Although it is fairly easy to start proceedings in China, language and evidence gathering issues are usually very costly when managing operations from abroad. As a result, as litigation is always a cost/benefit ratio, it is rare that litigation is pursued in China.

It is a misconception to think that foreign companies cannot be as competitive as Chinese counterparts in their local market. It obviously depends on the industry. If there are heavy restrictions and the sector is on the negative lists drawn up by the authorities, it is certain that it will be very complicated if not impossible to be on a par with a Chinese competitor. On the other hand, if there are no legal restrictions on the industry, it is quite possible to be on a par with the local competition as long as the products or services are adapted to the Chinese market and its requirements.

H4: Belgian companies do not do enough to protect their intellectual property in general but especially in China.

One could argue that companies are not doing enough to protect their intellectual property since IP rights are a critical resource and it is probably more appropriate than ever to take a global view of the world. Certainly, this is most likely the case for the smallest companies as well as those that have not developed a real IP strategy or have a limited budget. They could protect themselves with rather inexpensive tools such as registering their copyrights and trademarks. However, this answer needs to be balanced against the desire to operate in the Chinese market. Companies may not be well protected in this market because it is not part of their IP strategy and they just want to keep access to the technology developed. Generally, the larger the company, the better protected it is as its processes are developed and have been improved over time. Size is not the only factor as the characteristics of the industry are also important. The more markets require products and/or services adapted to local conditions, the less foreign protection will be needed and, therefore, carried out.

H5: Technology transfer is still common in China and orchestrated by the Chinese government

It cannot be said from the research that the Chinese government is forcing technology transfers. At first glance, it seems that the opposite is true. China is strengthening its intellectual property

and expects others to do the same to protect Chinese companies abroad. Technology transfers have been documented in the past, but China would not want its companies' knowledge to be transferred abroad now that it is focusing on innovation.

At present, if there is technology transfer, it is more likely to be between companies than under the influence of the government, as it corresponds to a need that makes economic sense for the future of the Chinese company in question. The reverse is also possible: it is possible to buy Chinese companies as a foreigner but M&A is much more controlled than in Europe to avoid any leakage of strategic resources or know-how.

### Limitations and further research

Although intellectual property strategies are rather stable over time, it is possible that the parts related to current events and Chinese geoeconomic strategy become obsolete rather quickly. This is due to the constant evolution of the Chinese IP legal system, which tends to resemble the European one, as well as to the evolving nature of the international context. Although the theoretical basis is constant, it is evolving very rapidly in recent times. It is therefore rather difficult to define with certainty how China will evolve in the current tense geopolitical context. Some parts of the literature used will therefore still be valid but could, to some extent, quickly become parts of history or the foundations to more developed and/or specific topics that could occur due to future events.

Another limitation is about the sample of companies interviewed. First of all, the size of the sample is 14. It is quite small. Not all sectors are represented and, for those that are, there are not actors of all sizes. Consequently, not all strategies are represented. Moreover, there is a disparity between the reality of the Belgian economic fabric and the companies interviewed. In Belgium in general, over 95% of all companies were SMEs in 2020 and accounted for 70% of the country's employment (FPS Economy of Belgium, 2022). Most of them do not probably have the capacity and means to develop any patentable innovation. According to the balance sheet totals of the companies surveyed, only 25% are small and medium companies and almost 75% are large companies. This is not really representative of reality. This is probably due to the low response rate by the smallest companies. Almost 30% of the large companies contacted were interviewed, while fewer than 5% of contacted SMEs were interviewed even though they met the criteria set out in the methodology. Most companies did not respond. Larger companies mainly cited confidentiality as a barrier to interviewing, while smaller companies did not have the time or did not see IP as a major concern.

The search criteria themselves also limit the study. In order to provide additional information, innovative companies not patenting in China could also have been interviewed to understand their strategy. Although a response as "Because we do not have or plan to have any activity in there and there is no risk of Chinese competition development which could become a threat to our business" can be expected, there might be some other reasons that would provide further insight.

The subject of the thesis is also a limitation. It is very broad and, given that each strategy is unique to each company, there is no clear-cut answer as to what exactly is and is not appropriate. It is not black and white but always grey. To remain accurate, it is necessary to limit



oneself to certain redundant trends among the companies interviewed, while considering their context. The reality of a company is not the same as the one of another. Although the strategy section deals with intellectual property, it focuses on patents. Many other dimensions of the possibilities to obtain rights have been omitted. However, an IP defence strategy in a company should not be limited to patents. Patents are only one of several tools that together form a portfolio offering maximum protection.

# Appendices

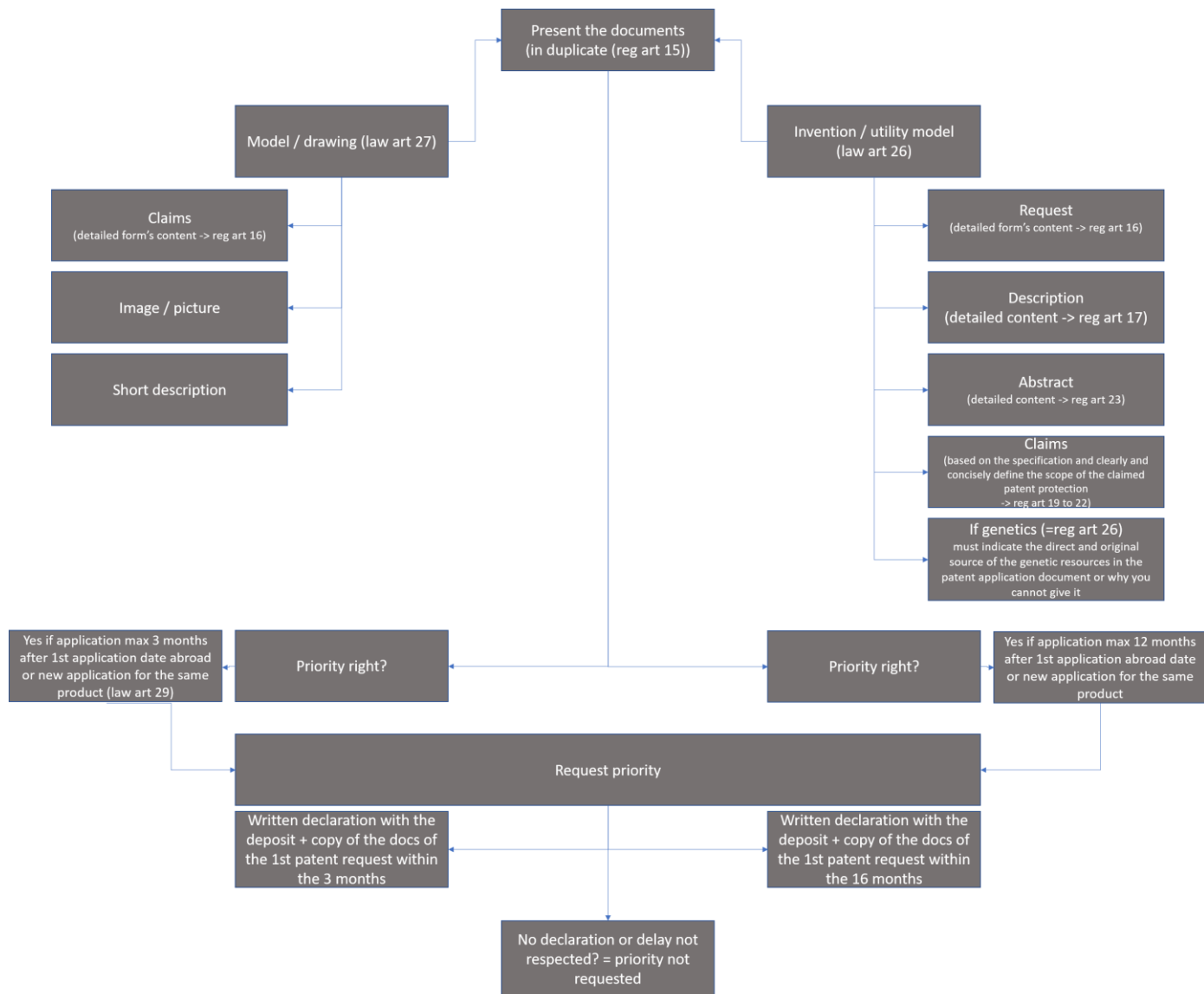
## Appendix A: Outline of the Chinese patent law

### 1. General dispositions



General rules:  
 1) Do not abuse of your patent (anti-monopoly law) -> law art 20  
 2) Patent Administration department of the State Council rules -> law art 21  
 3) Impartiality and anti-abuse rules for the services and their staff (law art 79 and 80)  
 4) All patent demands or other formalities to the Patent Administration Office of the Council of State are subject to payment of fees (law art 81)

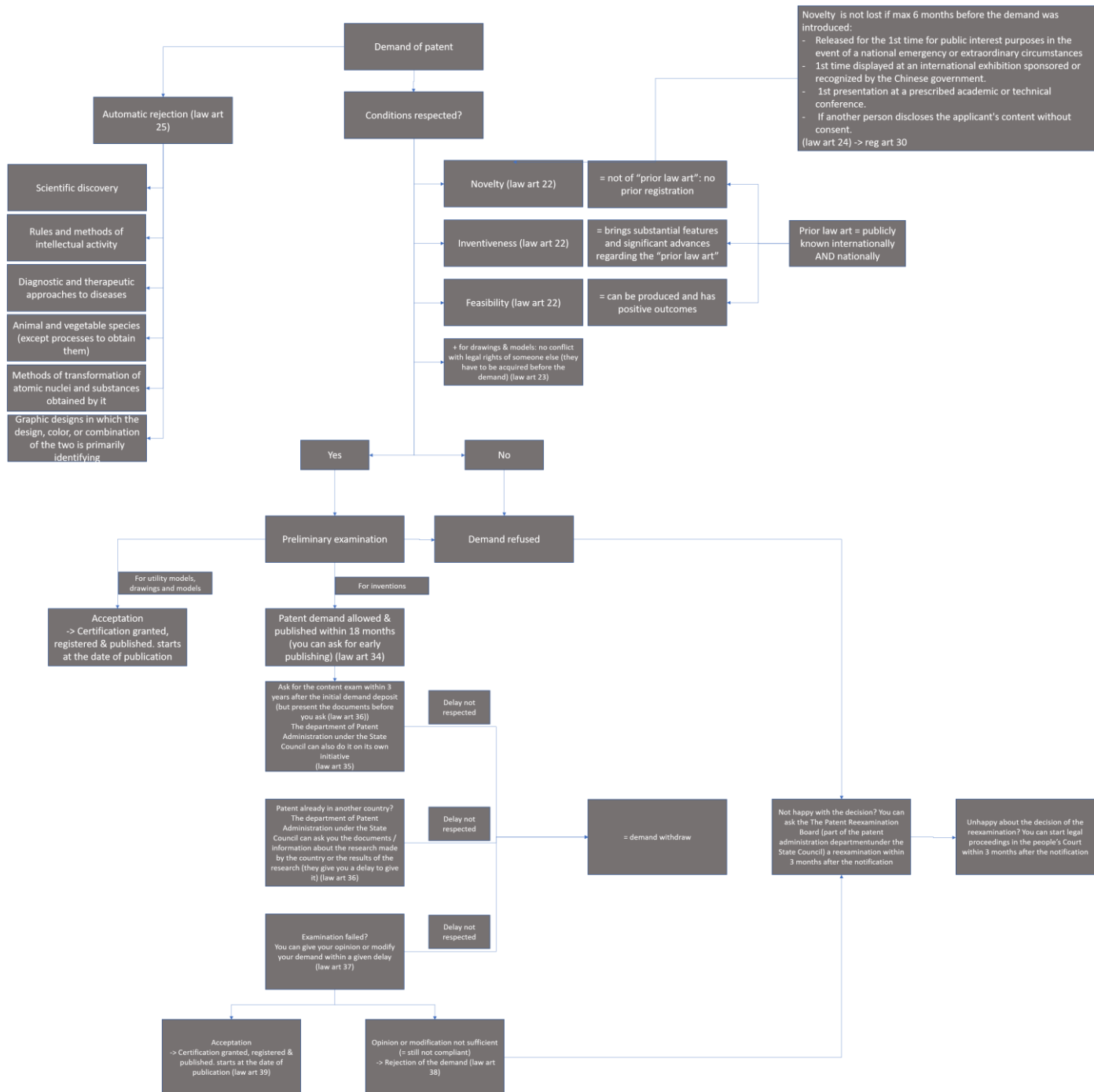
## 2. Patent request



### General rules (law):

- 1) Reception date = deposit date or post stamp date
- 2) Several inventions / utility models / drawings / models with the same general idea can be grouped under one request for patent
- 3) It is possible to withdraw the application or to modify it (law arts 28, 31, 32, 33)
- 4) If state secrets are disclosed during a patent application abroad (and non-compliance with law art 19) -> administrative sanction (+ penal if considered as crime) (law art 78)

### 3. Condition, examination and granting of patents



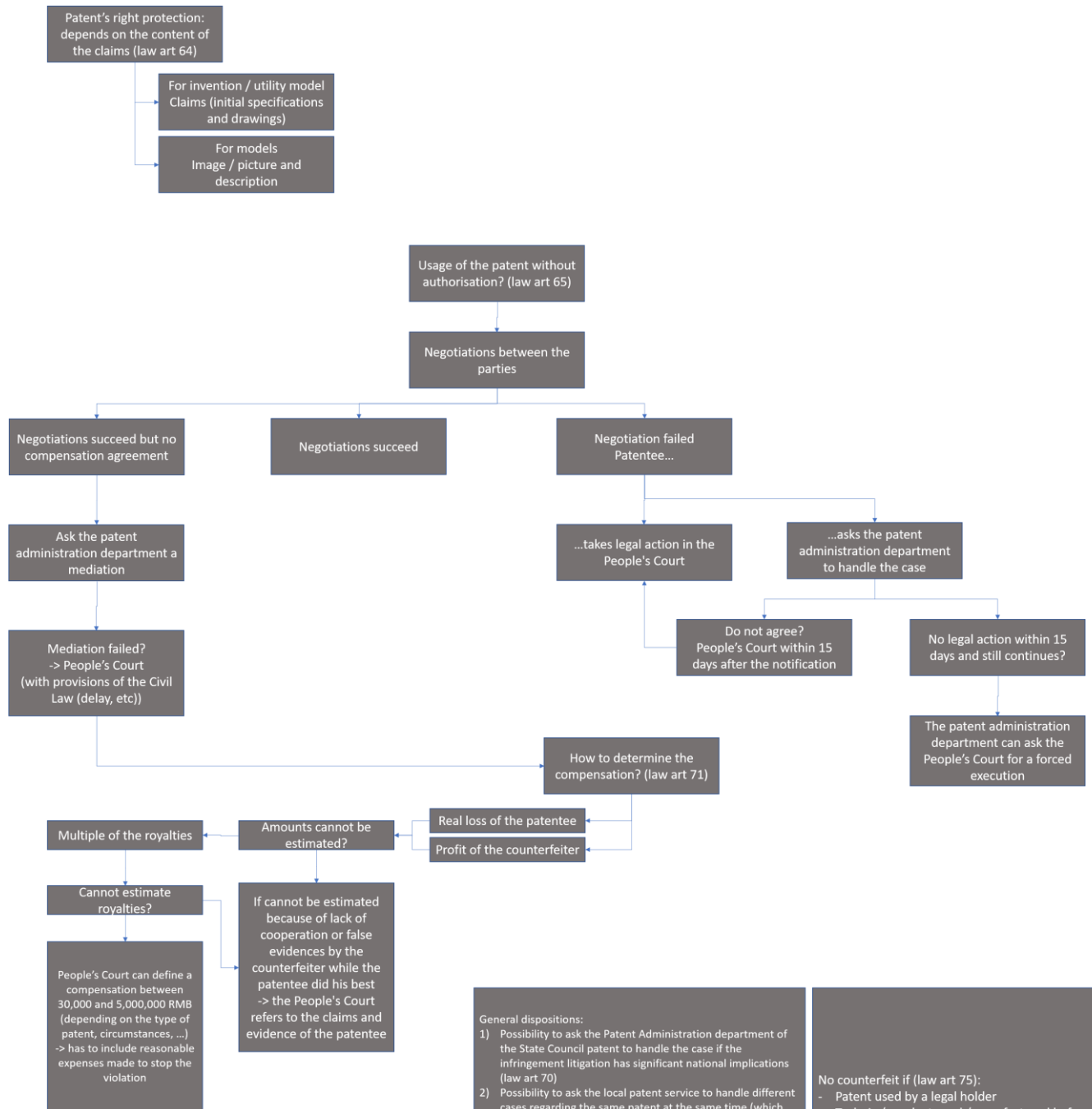
#### 4. Duration, extinction, tax and invalidity of patent rights



## 5. Special licences

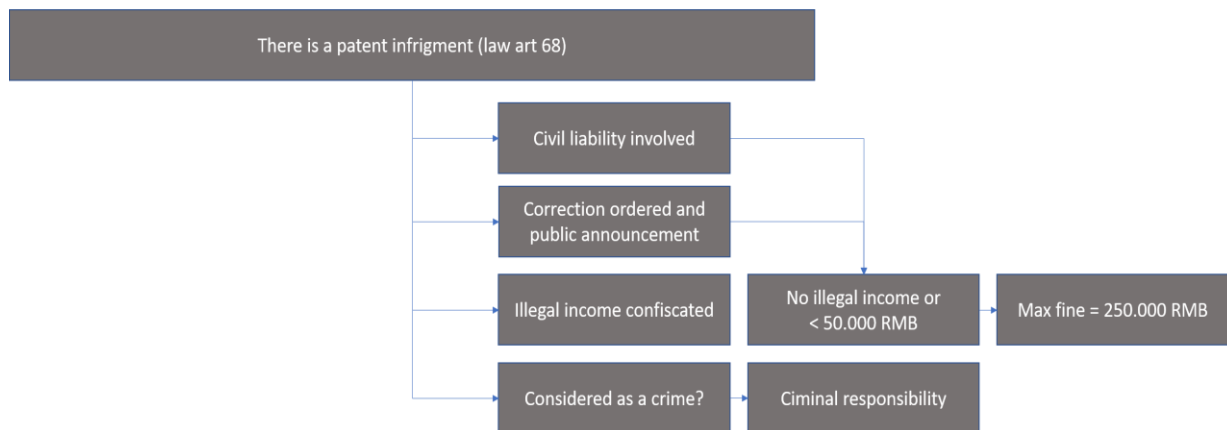
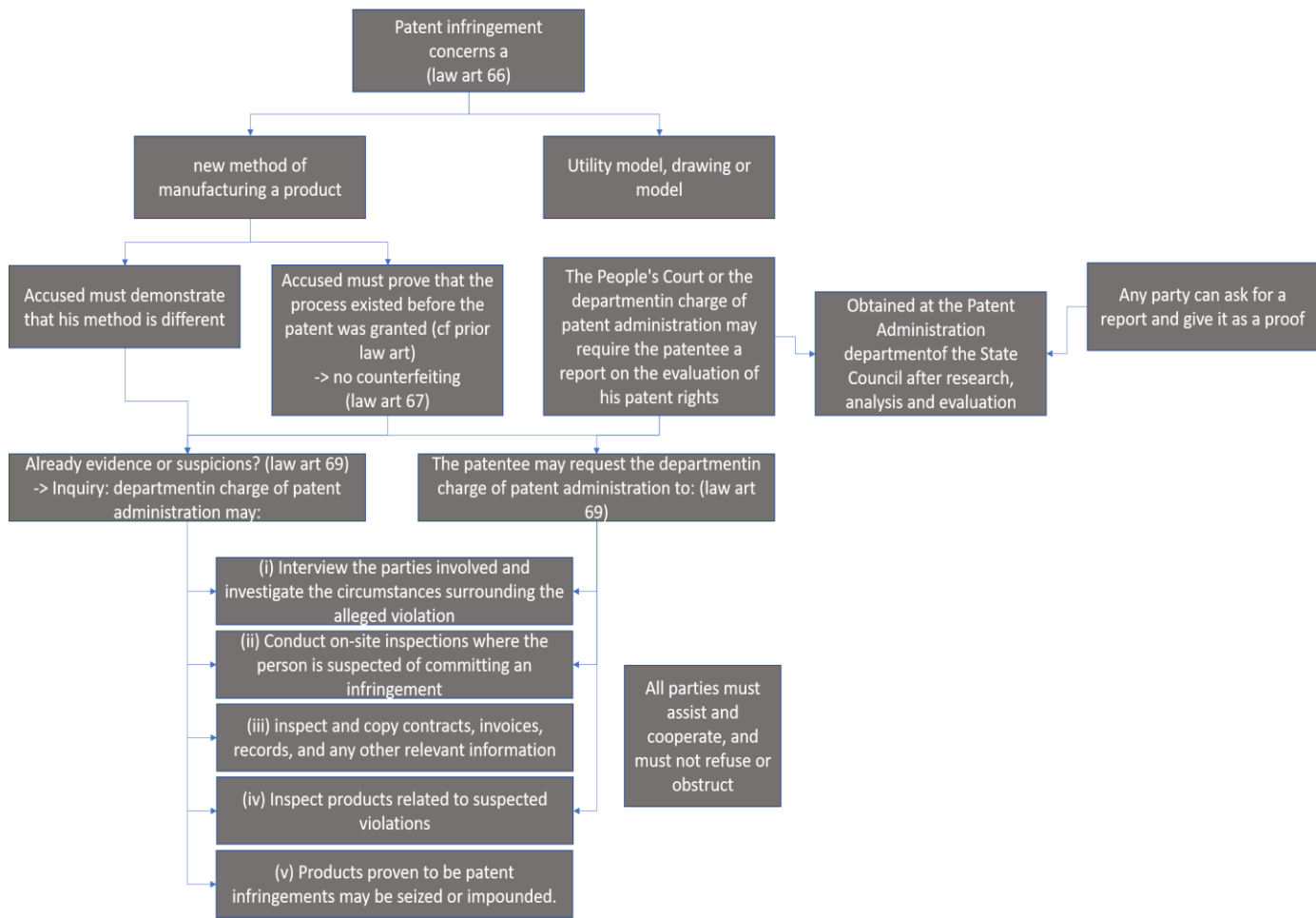


## 6. Using patent rights



- General dispositions:
- 1) Possibility to ask the Patent Administration department of the State Council patent to handle the case if the infringement litigation has significant national implications (law art 70)
  - 2) Possibility to ask the local patent service to handle different cases regarding the same patent at the same time (which service depends on the competence level of the service (local, regional, interregional, ...)) (law art 70)
  - 3) Proof of (coming) patent infringement? Ask the People's Court to take action before starting proceedings (to order or prohibit certain actions) (law art 72)
  - 4) If the evidences might be lost or difficult to obtain later on, ask the People's Court to keep them (law art 74)
  - 5) 3-year statute of limitations for patents starting the date you (should have) known the occurrence. (if patent used without permission between the request of patent and the granting: -> 3 years starting the date you should have known to request payment if you learned it after the delivery -> 3 years starting at the date of delivery if you learned it before the delivery) (law art 74)
  - 6) If there is a counterfeit without knowing that there is no authorisation from the patentee and that the legal source is proven -> no compensation (law art 77)

- No counterfeit if (law art 75):
- Patent used by a legal holder
  - Technic / product used /manufactured before the patent was granted (but still has to be the same process)
  - Foreign means of transportation temporarily crossing China's territory, waters or airspace using the relevant patents of their facilities and equipment for the means of transportation's own purposes
  - It only concerns scientific research and experimentation
  - Importing or manufacturing medicines with the purpose of giving information for a market approval -> Special provisions for medicines and pharma products, check law art 76.





## **Appendix B: List of data for each company**

- Name
- Number of people
- Contact person
- Position of contact person
- Email of the contact person
- Contact person's telephone number
- Company address
- Example of a patent with an integrated link to WIPO
- If the last patent was filed directly in China or via PCT (Patent Cooperation Treaty)
- Chinese reference agency in Chinese
- Chinese reference agency in English
- Identification number of the Chinese reference agency
- Name of the person in charge of filing patents in the company if there is one
- If not, which IP law firm was used
- Contact person in the IP law firm
- A note to indicate behaviour that differs from other companies (change of Chinese or local agency, several publications of the same patent, patent amendments, ...)

## Appendix C: Questions to companies

- How to proceed to file a patent?
- Did you ever work with a patent agency? If so, how to choose the right agency and what's your experience with it? Have you had any problem with it?
- Why do you patent something in China?
- What was your experience with China?
- How long does it take to patent something?
- Have you had any problems with the agency in China? And how did you choose the agency?
- Have you had any restrictions or had to make any special adaptations to the Chinese regulations/market?
- How do you perceive the Chinese market?
- Would you say that protecting an invention is difficult? Why? And is it necessary?
- How do you know if your patent is being used illegally or not? And how do/would you react?
- Have you experienced counterfeits or illegal uses of your IP? If so, did you start proceedings against the infringer? Did it work? Do you think it was worth it? Why/why not? How does it work?
- What are the consequences of the patent in China for you?
- What do you think and what do you know of the Chinese legal framework?
- Did you learn about Chinese laws before patenting?
- Would you recommend patenting the inventions (in China)? Why/why not?
- From when to internalize the process? What is your plan B if the main person dealing with patents goes away?
- How do you perceive the future of your company in/with China?
- What (financial, legal, ...) aid have you received? Are there fiscal gaps you are using?
- What is your IP strategy?
- How much do the patents you have cost? Is it worth it?

#### Appendix D: Questions to IP law firms

- What is your job? What do you offer?
- What happens when a customer reaches you for the first time?
- What kind of relationship do you have with your punctual/regular customers?
- How to proceed to file a patent in China?
- What information do you collect about your customer to be as effective as possible?
- What are the key points to consider when patenting in China?
- What is your experience with China?
- How long does it take to patent something in China?
- Have you had any problems with the agency in China? And how did you choose your contact?
- Have you had any restrictions or had to make any special adaptations to the Chinese regulations/market?
- How do you perceive the Chinese market?
- How have the Chinese market and Chinese law evolved these last years?
- Would you say that protecting an invention is difficult? Why? And is it necessary?
- How do you know if a patent is being used illegally or not? And how do/would you react?
- Have your customers experienced counterfeits or illegal uses of their IP? If so, how to start proceedings against the infringer? Did it work? Do you think it was worth it? Why/why not? How does it work?
- Would you recommend patenting the inventions (in China)? Why/why not?
- How do you perceive the future of companies in/with China regarding their long-term ambition?
- What is your IP strategy/portfolio management strategy regarding your customers?
- How much does it cost to patent?
- What is the role of the Chinese subsidiaries?

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## Executive summary

Intellectual property is a major concern for most innovative companies. It is also of very high importance for China, which is making a shift towards innovation and aims to become a global powerhouse for intellectual property protection. For years, the country has been facing a lot of criticism regarding its operating modes and real ambitions while it suffers a rather bad reputation regarding its intellectual property protection system, especially by foreigners. However, despite the country's reputation, many foreign companies are not doing a particularly good job of protecting their intellectual property in China, if at all, while some others excel. Many companies are not aware of what China is, how it has and is evolving and do not understand the business challenges and opportunities in and coming from the country, which often go beyond the business level. To establish an understanding of the current situation, this study aims to recontextualise Chinese actions, to expose a utilisation of the Chinese system as well as to provide a scope of strategic possibilities by focusing mainly on patents. This was made possible thanks to interviews with 14 companies of various sizes and sectors, all of which have IP-related interests in China as well as 3 IP-focused law firms. The study has shown that China is indeed extending its influence in Europe as well as in other regions of the world and that there is a growing need for companies to act in an informed manner with regard to the protection of their intellectual property. Although the tools and procedures for protection are common to all, there is no single strategy but a multitude that depends mainly on the industry in which the company operates, its business strategy, its level of internationalisation and its financial resources.